



**Volume II - June 2013**

Final Environmental Impact Statement

# **Outdoor Research, Development, Test & Evaluation Activities**

Naval Surface Warfare Center, Dahlgren Division

Dahlgren, Virginia

NSWCDD-AP-12-00299 *Statement A: Approved for Public Release. Distribution is Unlimited.*

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Department of the Navy  
Naval Surface Warfare Center, Dahlgren Division,  
in accordance with Chief of Naval Operations  
Instruction 5090.1C CH-1;  
pursuant to National Environmental  
Policy Act Section 102(2)(C)



# **Final Environmental Impact Statement Outdoor Research, Development, Test & Evaluation Activities**

## **VOLUME II**

### **APPENDICES A – D**

**Naval Surface Warfare Center, Dahlgren Division  
Dahlgren, Virginia**

**June 2013**

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**Final Environmental Impact Statement**  
**Outdoor Research, Development, Test & Evaluation Activities**  
**Naval Surface Warfare Center, Dahlgren Division**

**VOLUME II**

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**APPENDIX A**

**PUBLIC AND AGENCY  
COMMENTS ON THE DEIS**

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## Appendix A: Public & Agency Comments on the DEIS

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This appendix contains the comments received on the Naval Surface Warfare Center, Dahlgren Division's (NSWCDD) draft Environmental Impact Statement (DEIS) for Outdoor Research, Development, Test and Evaluation Activities. The Notice of Availability of the NSWCDD DEIS was published in the *Federal Register* on August 17, 2012 starting a 45-day comment period that closed on October 1, 2012. The DEIS was available for review on the NSWCDD website or by request from NSWCDD's Public Affairs Office. During the comment period, three public meeting/hearings were held in: Newburg, Maryland, King George, Virginia, and Montross, Virginia. In addition, the document was distributed directly to officials of federal, state, and local governments, citizen groups and associations, and parties who had expressed an interest during the EIS scoping process.

Oral and written comments provided during the public meetings/hearings, as well as comments submitted via mail, e-mail, or fax during the public comment period, were evaluated and responses prepared.

To facilitate the organization of the comments and the preparation of responses to the comments, the transcripts and comments are identified by a three-part code as follows:

1. The first part of the code refers to the origin of the comment: federal agency (code 'F'), state agency (code 'S'), local government (code 'L'), non-government organization (code 'NGO'), and public (code 'P'). The letters/faxes/e-mails/oral comments (referred to as letters) were numbered based upon chronological order (i.e., first comment received was 001).
2. For written comments containing multiple comments (such as a letter from an agency that makes a number of separate points), specific comments were identified and numbered based on their order within the document. (i.e., the first comment was numbered '1'). Specific comments were marked on the transcript/letter/e-mail/fax.
3. A sub-number was added to categorize comments by subject, based on sections of the DEIS as follows: 0.0 General, 1.0 Purpose and Need, 2.0 Alternatives including the Proposed Action, 3.0 Affected Environment (by resource), 4.0 Environmental Consequences (by resource), 5.0 Cumulative Impacts, 6.0 Protective Measures, 7.0 References, 8.0 Distribution and Notification List, 9.0 List of Preparers and Reviewers, 10.0 Appendices (Divided into 10.A, 10.B, etc.), and 11.0 Comments that Pertain to Multiple Sections. Note that comments that do not pertain to any particular section were placed in the 0.0 General category.

For example, the first comment received on August 21, 2012 came from a member of the public and focused on NSWCDD's safety record. Applying the numbering scheme described above, this became comment P001.1-3.8. The P001 represents the first public commenter, the 1 the specific comment (there is only one in this e-mail), and 3.8 refers to the Health and Safety section in the DEIS where this issue is addressed.

Comments are summarized and categorized by subject in a comment matrix that begins on the Page A-3. The order of the comments in the matrix is first federal agency (code 'F'), followed by

state agency (code 'S'), local government (code 'L'), non-government organization (code 'NGO'), and public (code 'P').

Following the comment matrix are the original versions of the comments received as transcribed oral testimony and written comments at the public hearings, and as letters, faxes, and e-mails received during the DEIS comment period. The numbered comments in the comment matrix are keyed to individual comments in the original versions of the comments.

**Comments Received and Responses to Comments**  
**Draft Environmental Impact Statement Outdoor Research, Development, Test & Evaluation Activities**  
**Naval Surface Warfare Center, Dahlgren Division, Dahlgren, Virginia**

Name/Agency	Comment Number	Comment Category	Comment	Response
<b>Federal Agency (code 'F')</b>				
Cindy Schulz, US Fish and Wildlife Service	F001.1-0.0	General	The Virginia office of USFWS no longer provides environmental reviews, but has developed a website to assist in project reviews.	Comment noted and website consulted.
Peter E. Dargle, USAG Fort A.P. Hill Commander	F002.1-0.0	General	Fort AP Hill is in receipt of the DEIS and has initiated review of the document to ensure all associated Fort AP Hill information contained in the document is current & valid.	Comment noted. The Navy responded below to Fort A.P. Hill's subsequent comments, numbered F005.1 through F005.5.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.1-0.0	General	USEPA has concerns with impacts to air, water, biological resources, environmental justice, children's/human health, and cumulative impacts. USEPA rated the DEIS an EC-2, indicating that we have environmental concerns and there is insufficient information to fully assess the environmental impacts.	Commented noted. The Navy responded below to USEPA's specific comments, numbered F003.2 through F003.55.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.2-2.0	Alternatives	USEPA is not certain that the Proposed Action would not pose an impact to human and environmental health at the quantities proposed.	The DEIS contains the analyses and comparisons that provide the basis of the negligible impacts to human health and the environment. Please see responses to specific F003 comments below.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.3-2.7/4.0	Alternatives, RSIP	There is no distinct reason for selecting Alternative 2 as the Preferred Alternative, as both alternatives meet the Navy's goals. USEPA suggests a more conservative approach, such as phasing in of increased activities, and questions whether the additional increase in activities would be worth the added risks to the environment and human health.	<p>As stated in EIS Section 2.7, Alternative 2 is the Navy's Preferred Alternative because it would optimize NSWCCD's activities on ranges and the Mission Area, without significantly increasing environmental impacts, and thereby would improve NSWCCD's operational capability and flexibility to provide mission support to the Navy and to the other services and organizations.</p> <p>Text was added to EIS Chapter 2 clarifying that increases in some activities, such as the chem/bio simulant testing, would occur gradually. However, based on the nature of RDT&amp;E, the rate of increase cannot be predicted.</p> <p>As stated in the EIS, Alternative 2 would not result in increased risks to the environment and human health from any of the RDT&amp;E activities, regardless of whether increases occur all at once or in stages.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.4-2.0	Alternatives, small arms firing	What is the ratio of bullets fired indoors versus outdoors for each alternative?	The EIS focuses only on outdoor RDT&E activities. The bullets discussed in the EIS would be fired outdoors for all alternatives.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.5-2.0	Recovering bullets	Is it possible to capture bullets fired at river targets so that they do not enter the river and sink to the bottom?	While NSWCCD does capture bullets fired at targets on land, it would be almost impossible to capture bullets fired at river targets because of the small size of the bullets and the large area in which they may land.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.6-2.6	Inert and explosive bullets	For Alternative 2, what percent of bullets fired into the Potomac River would be inert and what percent would be explosive?	<p>As noted in EIS Section 2.5.1.2, because of the nature of RDT&amp;E, it would be difficult to project the future percent of live vs. inert bullets because program testing requirements evolve. Nevertheless, our goal is to use inert bullets as much as possible for all firings and to minimize the use of live bullets in order to minimize environmental impact.</p> <p>Most bullets fired are inert. Explosives are only used to tip some 20 mm and larger bullets. The Marine Corps program that would drive future increases in small-arms testing would use smaller 7.62 mm or 9 mm bullets, which cannot accommodate tipped explosives and are all inert. Therefore, the percentage of explosive-tipped bullets used is expected to decline in the future.</p>



Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.7-1.5/2.0	EM energy activities	Proposed activities using electromagnetic energy should be evaluated by and coordinated with the Federal Communications Commission (FCC) for safety.	NSWCDD coordinates with the Navy and Marine Corps Spectrum Center, which is responsible for ensuring access to and effective use of the EM spectrum in national security and military operations and coordinates with the FCC. For activities involving HERO, HERF, HERP, and EMI, NSWCDD is the Navy's expert in confirmed safe exposure levels and ensures that the proposed activities do not pose a danger to the public.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.8-1.5/2.0/4.0	Chemical simulants, quantities and exposure	Chemical simulants proposed for use are not without risk and even relatively non-toxic chemicals can cause harm at high-enough doses. The important point is the quantity of simulants being released and who is being exposed.	Comment noted. NSWCDD has a proven health and safety process for protection of human health and the environment. A risk hazard assessment (RHA) is prepared for every testing operation, and those determined to be potentially hazardous require a standard operating procedure (SOP). The SOP and pre-test validation ensures worker safety and restricts individuals not involved in testing from access to test areas. No elevated exposure is expected to anyone outside the restricted test areas.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.9-4.0	Chemical simulants, human receptors	There is no information on possible human receptors, although the predicted concentrations are high enough to produce adverse effects in exposed individuals.	As described in the response to comment F003.8, NSWCDD has a process in place to protect human health and the environment. SOPs specify protective measures to be taken for RDT&E activities. No elevated exposure is expected to anyone outside the restricted test areas. As described in Section 4.4.1, the SOP for this type of test includes the provision that anyone with the potential for exposure to elevated concentrations within restricted test areas will be equipped with personal protective equipment (PPE) in the event of an unexpected incident, such as a spill or wind shift.  Simulants are released as a vapor, which requires a large amount of dilution, resulting in low simulant concentrations to challenge detection equipment.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.10-4.4	DEM concentration	Figure 4.4-1 indicates that the DEM concentration in air decreases to zero after about five minutes, but this is not supported by Table 4.4-2.	<p>Forty-eight modeling scenarios were run for DEM. Each scenario modeled maximum concentrations and dispersal distances using a combination of possible release heights, quantity of simulant, droplet mass median diameter, wind speed, and air temperature. A summary of the modeling scenarios (runs) is presented in Appendix J of the EIS. Table 4.4-2 presents the maximum concentration modeled after 10 minutes from all 48 test runs. For DEM, run 030 had the highest modeled air concentration after 10 minutes, so it is listed in Table 4.4-2.</p> <p>Figure 4.4-1 presents a representative run, DEM test 029. This run is not listed in the table because it did not have the highest maximum DEM concentration of the 48 runs presented in Appendix J. This figure was presented to provide a representative run showing a quick return to background levels. Text was added to the EIS to clarify that many different scenarios were run for each simulant.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.11-2.5	Chemical simulants safety	USEPA recommends the Navy 1) provide adequate worker safety (personnel protective equipment), 2) conduct real-time air monitoring during release activities, and 3) restrict individuals not involved in testing from areas affected by releases.	<p>As described in the response to comment F003.8, NSWCCD has a proven process in place to protect human health and the environment. SOPs and pre-test validations ensure worker safety and restrict unauthorized individuals from the test area.</p> <p>The SOP for simulant testing lists measures taken to provide worker safety protection, including providing PPE for personnel in the test area in the event of unplanned incidents or wind shifts. Individuals not involved in tests are restricted from release areas.</p> <p>Use of the detector being tested, such as the Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), is preferable to real-time air monitoring because it can detect lower concentrations of simulants. Detectors will be tested indoors prior to being tested outdoors. Therefore, no additional air monitoring is planned.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.12-2.5	Biological simulants, pathogenicity	<i>Bacillus atrophaeus</i> and <i>Aspergillus niger</i> are pathogenic to humans. If available, non-pathogenic simulants should be used instead. If not, the precautions described in the	As described in Section 2.5.4.6, NSWCCD would only use biosafety level 1 (BSL-1) organisms, defined by the Centers for Disease Control and Prevention as well-characterized strains of viable microorganisms not known to consistently cause disease

Name/Agency	Comment Number	Comment Category	Comment	Response
			previous comment should be considered, although they may not fully protect individuals from future exposures. Of particular concern are sensitive individuals who are more at risk than healthy adults.	<p>in healthy adult humans and of minimal potential hazard to laboratory personnel and the environment<sup>1</sup>. People with compromised immune systems may react to them, but most people do not.</p> <p>The USEPA's <i>Aspergillus niger</i> Final Risk Assessment, dated February 1997, states in the Summary of Risk Integration section that "<i>Aspergillus niger</i> is worldwide in distribution and has been isolated from numerous habitats. Humans are continually exposed to <i>A. niger</i> spores and vegetative forms on foodstuffs and in the air. The vast majority of strains of <i>A. niger</i>, especially those used in industrial fermentation, have a history of safe use. While there are sporadic reports to the contrary, most isolates have not been documented to be serious pathogens of humans, animals or plants. Specific strains may produce certain mycotoxins or may elicit allergic responses among workers. Those limited instances of adverse effects seem to be associated with a limited number of strains. With proper characterization of industrial strains, use of those with potential for such effects can be avoided."</p> <p><i>Bacillus atrophaeus</i> produces spores that serve as surrogates for <i>B. anthracis</i>, the causative agent for anthrax. It has been used for many years in this role and is the most frequently used simulant for anthrax (Borden Institute et al., 1997<sup>2</sup>; Edgewood Chemical Biological Center, 2004<sup>3</sup>; Greenberg et al., 2010<sup>4</sup>).</p> <p>SOPs similar to those for chemical simulants would be in place for testing of biological simulants. As described in the responses to F003.09 and F003.11, the SOP for this type of</p>

<sup>1</sup> Centers for Disease Control and Prevention. 2009. *Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition*.

<sup>2</sup> Borden Institute, Walter Reed Army Medical Center; Office of The Surgeon General, US Army; US Army Medical Department Center and School; US Army Medical Research and Materiel Command; and Uniformed Services University of the Health Sciences. 1997. *Textbook of Military Medicine, Medical Aspects of Chemical and Biological Warfare*.

<sup>3</sup> Edgewood Chemical Biological Center. 2004. *Production of Bacillus Spores as a Simulant for Biological Warfare Agents*. U.S. Army Research, Development and Engineering Command, Aberdeen Proving Ground, MD.

<sup>4</sup> Greenberg, D.L., J.D. Busch, P. Keim, D.M. Wagner. 2010. Identifying experimental surrogates for *Bacillus anthracis* spores: A review. *Investigative Genetics* 1:4.

Name/Agency	Comment Number	Comment Category	Comment	Response
				<p>test includes the provision that anyone with the potential for exposure to elevated concentrations within restricted test areas would be equipped with PPE, including respirators, in the event of an unexpected incident, such as a spill, or wind shift.</p> <p>As described in Section 4.4.2.2, individuals with compromised immune systems or respiratory conditions would not serve as personnel on the release boat because they would not qualify for respirator use. Therefore, no high risk individuals would be potentially exposed to biological simulants.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.13-2.5	Chem/bio simulants, interactions	What are the interactions of interferents, smokes, and obscurants with the proposed chemical and biological simulants and what are the risks? USEPA suggests that the Navy conduct real-time air monitoring during release activities.	<p>The interactions of interferents, smokes, and obscurants with the proposed chemical and biological simulants outdoors over and near water are not well known. The purpose of these tests is to study how the capability of detectors in estuarine/marine conditions is affected by simulants. Interactions between interferents and simulants are of concern because interferents, smokes, and obscurants can reduce the ability of detectors to distinguish between chemical and biological agents and other compounds. For example, use of soot in tests with biological simulants <i>Bacillus subtilis</i> and ovalbumin resulted in a significant number of false positives and false negatives, when the rate without the use of soot was insignificant (Gottfried et al., 2008<sup>5</sup>).</p> <p>The use of interferents, smokes, and obscurants is not considered to increase risks to human health and the environment, as there are no known toxicological interactions between interferents and simulants.</p> <p>Stand-off detectors such as the JSLSCAD would be used to remotely detect simulant vapors (see Section 2.5.4). No additional air monitoring is planned.</p>

<sup>5</sup> Gottfried, J.L., F.C. De Lucia, C.A. Munson, and A.W. Miziolek . 2008. Standoff Detection of Chemical and Biological Threats Using Laser-Induced Breakdown Spectroscopy. *Applied Spectroscopy* Vol. 62(4):353-363.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.14-3.4/4.4	Air quality, chemical simulants	USEPA questions whether proposed increases in chemical simulants would produce the same results as air quality analyses at No Action Alternative levels.	Chemical simulant concentration exposure levels would not increase between the No Action Alternative and the action alternatives. Under Alternatives 1 and 2 the number of chemical tests would rise to allow the testing of more types of chemical simulants, but there would be no change from the No Action Alternative in the quantity of simulant used for each test. Concentrations of vaporized chemical simulants would rapidly return to background levels – below detection levels – after each test. Tests would be spaced in time and place to minimize exposure levels in any one area.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.15-3.4/4.4	Air quality, chemical simulants	Will the Navy continue to conduct air quality modeling and testing for chemical simulants and how frequently? If measurable results are found, what actions would the Navy take to ensure the safety of human health and the environment?	<p>The Navy would continue to model simulant concentrations and distributions applicable for each event planned. Detection of chemical simulant vapors would occur at every event as the detectors being tested are designed to detect very low concentrations of simulants.</p> <p>Measurable results, given the sensitivity of the detectors, would be well below concentrations that could impact human health or the environment. Human health and the environment are protected by selecting low toxicity simulants and deploying them in small quantities to ensure that the experiments do not pose risks.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.16-3.4/4.4	Air quality, chem/bio simulants	It seems difficult to assume that the same air quality impact determination as resulted from historical modeling and testing at the No Action Alternative levels would result from analyses for a maximum increase of 483 percent for chem/bio defense events.	The frequency of simulant tests would increase from a maximum of 12 events (zero events for biological simulants) under the No Action Alternative to a maximum of 60 events (could use either biological or chemical simulants) for Alternative 1 and 70 events (could use either biological or chemical simulants or a mixture) for Alternative 2. Because simulants are rapidly dispersed as aerosols into the environment, have low toxicity, are not tested repeatedly in one area, and standard operating procedures would be followed to protect human health and the environment, the increase in frequency would not result in a change from the No Action Alternative for chemical or biological simulant concentrations. Standard operating procedures would be followed to protect human health and the environment. Emission increases for other activities would be negligible and would not interact with or affect simulant concentrations.



Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.17- 4.4/4.0	Chem/bio simulants, synergistic effects	As the basis is unknown for the statement "There is no research on synergistic effects between low toxicity chemical and BSL-1 biological simulants most likely because given the low level of risk from both elements no synergistic effects are expected," it cannot be assumed that impacts would not occur.	<p>A detailed search was conducted for research on the synergistic effects between/among the particular low-toxicity chemicals and biological simulants that would be used for these tests. As stated in the EIS, there is no research on synergistic effects between low toxicity chemical and BSL-1 biological simulants most likely because given the low level of risk from both elements, no synergistic effects are expected.</p> <p>Preliminary research indoors in the laboratory is conducted at NSWCDD before tests are performed outdoors. Therefore, if there were any synergistic effects from combining the chemical and biological simulants, it would be apparent in the indoors tests. Outdoor tests would only be performed with combinations of chemical and biological simulants that have been safely tested together indoors.</p> <p><i>A Chemical and Biological Defense Program (CBDP) Programmatic EIS</i> (US Army, 2004) was prepared to evaluate the impacts of the military's nationwide CBDP. The Programmatic EIS determined that impacts at NSWCDD from the chemical simulant testing (no biological testing had taken place) were negligible. All observed effects from both chemical and biological defense programs at the eight example sites covered in the Programmatic EIS, including NSWCDD, were insignificant. The EIS concluded that potential risks to CBDP laboratory workers, public health, and the environment are and will continue to be mitigated by adherence to benchmark guidelines and regulations, including those of the Department of Defense (DoD), the Centers for Disease Control and Prevention (CDC), US Food and Drug Administration, National Institutes of Health (NIH), US Nuclear Regulatory Commission, Occupational Safety and Health Administration (OSHA), US Department of Agriculture (USDA), US Department of Transportation (USDOT), and the USEPA, and by developing and following appropriate SOPs.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.18- 4.4/4.0	Air quality, impact threshold	The Navy should disclose at what threshold there would be concern for air quality impacts.	<p>There are no federal or state thresholds for any of the chemical or biological simulants that would be used. Levels of simulants would only be elevated in the test area. Within the test area, simulant vapors would rapidly disperse to background levels.</p> <p>Prior to each chem/bio operation, coordination takes place with NSF Dahlgren, the Maryland Department of the Environment, and the Virginia Department of Environmental Quality (VDEQ), as applicable, concerning the types and quantities of simulants proposed for use (Section 6.2.2). These agencies have not expressed concern about air quality impacts.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.19- 4.4/4.8	Chemical and biological simulants interactions	The DEIS should discuss risks to human health as a result of chemical and biological interactions.	See response to comment F003.17.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.20- 4.4/4.0	Air quality monitoring and analysis	Discuss whether the Navy plans to monitor and analyze air monitoring during release events.	As discussed in F003.11, chemical simulants are detected (monitored) during all release events. The same procedures would also apply to biological simulants and chem/bio simulants used together. Therefore, no additional air monitoring is planned.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.21- 4.10/4.11/4.14	Biological simulants, water quality	At Alternative 2 levels, considering the quantity of biological simulants and number of biological defense events proposed, USEPA questions whether there will be negligible, cumulative impacts over time to water quality and aquatic resources.	<p>Although up to 70 chemical and biological simulant test events annually could occur under Alternative 2, the likely testing schedule would take place over two-week periods followed by long periods with no testing. Not all tests would include biological simulants.</p> <p>Sequential tests would not be conducted at the same location. This procedure would minimize any cumulative impacts because the concentration of biological simulants would quickly return to background concentrations. None of the biological simulants that would be tested are known to adversely affect water quality or aquatic resources. See also the response to F003.16.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.22-4.10	Simulants, water and wetlands	How long can simulants remain in the environment, and what spacing of time is required to ensure that the land and water areas are not exposed multiple times to the same simulant?	The length of time that chemical and biological simulants remain in the environment varies depending on the degradation time of the chemical compound and the biological organism (e.g., spores may be dormant). All chemical and biological simulants are low toxicity compounds or organisms. Simulant tests are designed to minimize deposition on land and water areas. Chemical simulant vapors and biological simulant powders released into the air rapidly disperse in the environment and are diluted to concentrations below detection levels. To provide additional protection, chemical and biological simulant tests are spaced in time and location so that no one area is exposed multiple times to the same simulant in the near term. See also responses to F003.14, F003.16, and F003.21.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.23-4.10	Simulants, water and wetlands	Is simulant dispersal greater in moving water and, if so, will impacts be greater in resources with less water movement, like wetlands?	As discussed in the response to F003.22, chemical and biological simulant tests are designed to minimize deposition on land and water areas. While simulant dispersal is faster in moving water – in the river – no simulant release points would be located close to wetlands, such as the ones along Gambo Creek or pockets along the shoreline of the river.  The minute amounts of simulants that could reach nearshore areas or wetlands would be very low, generally below detection levels and well below concentrations that have been shown to cause adverse effects. As discussed in Sections 4.10 to 4.14, any impacts would be negligible and short-term and would not adversely affect water resources. This conclusion is valid for the Potomac River, creeks, wetlands, and all water resources in the area.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.24-4.10	Simulants, wetlands and floodplains	With respect to chem/bio simulants entering wetlands and floodplains, there is a question as to the cumulative impact to resources from the quantity of chemical and biological simulants proposed in addition to potential runoff from land-based firings of munitions and detonations of explosives.	Chemical and biological simulant tests are designed to minimize deposition on land and water areas. Concentrations of chemical and biological simulants reaching wetlands and floodplains would be well below detection levels and levels that could harm the environment.  A Range Condition Assessment (RCA) evaluated all land-based ranges where munitions operations are conducted and found RDT&E operations at the land ranges to be in overall compliance with applicable environmental regulations and program requirements (see Section 3.7.6). Any impacts from ordnance tested on land-based ranges would be negligible.

Name/Agency	Comment Number	Comment Category	Comment	Response
				These potential effects combined with the negligible effects from chemical and biological simulant testing over water would result in negligible cumulative impacts to wetland and floodplain resources, as neither testing activity would adversely impact water resources.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.25-4.10	Simulants, water, wetlands, and floodplains	What threshold of chem/bio simulant concentration would pose a concern for surface water, water quality, and wetlands, and what contingency plan would the Navy implement if its activities do result in considerable impact to resources?	<p>There are no federal or state water quality thresholds for any of the chemical or biological simulants that would be tested. All chemical and biological simulants are low toxicity compounds/organisms.</p> <p>As displayed in Table 3.8-5, the levels at which chemical simulants may cause adverse effects are well above concentrations that aquatic organisms would be exposed to by chemical simulant tests. Most of the toxicity values listed in this table are based on exposure through ingestion or inhalation – pathways that are unlikely to occur from incidental exposure to simulants settling on the water surface.</p> <p>The maximum predicted chemical simulant concentrations modeled were compared to aquatic toxicity values in Section 4.11.1.4. All modeled maximum exposure concentrations were orders of magnitude below effects levels, showing that threshold or target levels for effects would not be reached.</p> <p>It should be emphasized that the chemical simulant concentrations presented in Appendix J are the maximum concentrations modeled for each simulant and would be present for very short time periods (the concentration listed is after 10 minutes). For each test, before biological simulant releases for biological detector testing takes place, biological simulant modeling will be performed when the quantity and type of simulant and the dispersion method have been determined based on priorities and needs.</p> <p>Impacts to water or biological resources from increased levels of chemical and biological simulant testing would be negligible and would not adversely affect resources.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.26-3.10	Water quality sampling	Does Virginia sample water quality in the Chesapeake Bay and the Potomac River closer to NSWCDD than the MDNR monitoring stations?	In the vicinity of NSF Dahlgren and the PRTR, the State of Maryland has jurisdiction over the Potomac River to the low water mark on the Virginia side of the river with the exception of the entrances to creeks, bays, and shoreline indentations that lie in Virginia. Therefore, Virginia does not sample water quality in the Chesapeake Bay and the Potomac River closer to NSF Dahlgren and the PRTR than the MDNR monitoring stations.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.27-3.10	Water turbidity	As data from the USGS monitoring station near Washington, DC were used in the turbidity analysis and the analysis indicated negligible correlations for the three downstream stations, can this be considered a fair account of the turbidity in the PRTR?	<p>The subject discussion in EIS Section 3.10.1.2 does not address a poor correlation between the sampling station near Washington and the three downstream stations. The analysis indicated moderate to high correlation between discharge (using data for the station near Washington) and turbidity at the two stations upstream of the MDZ, whereas it indicated negligible correlation between the two parameters for the three stations downstream of the MDZ.</p> <p>The subject discussion was revised to improve its clarity.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.28-3.10	Water quality, benthic community	With reference to the health of the benthic communities and the B-IBI scores in the Potomac River, because of significant efforts to improve the health of the Chesapeake Bay, the Navy should discuss its commitment to monitor its activities in terms of water quality and water resources.	<p>As stated in NSWCDD's Environmental Policy (Section 6.1 of the EIS), the Navy has made a commitment to "<i>Ensuring pollution prevention, preservation of our land, Chesapeake Bay sustainability, and protection of natural and cultural resources.</i>"</p> <p>As described in the response to F003.25, there are no federal or state water quality thresholds for any of the chemical or biological simulants that would be tested. RDT&amp;E activities are constantly monitored to ensure that they follow protocols for the protection of human health and the environment.</p>



Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.29- 3.7/4.11	Munitions removal, wetlands	How does the Navy remove munitions that are exposed on the ground surface or partially buried, and does the Navy remove munitions from wetlands?	<p>As part of each land-based energetic material operations SOP, munitions and debris are cleared as a post-test requirement by qualified ordnance personnel. NSWCDD's Range Management Plan and the Navy's Operational Range Clearance Policy for Navy Ranges<sup>6</sup> includes requirements for such activities as the removal, disposal, and recycling of unexploded ordnance (UXO), range scrap, and debris. Generally, existing NSWCDD procedures comply with the operational range clearance policy.</p> <p>As shown on EIS Figure 3.10-8, there are no wetlands in areas of the ranges where ordnance testing occurs. Therefore, munitions do not enter wetlands, and there is no need to remove them from wetlands.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.30- 2.6/4.11	Detonations, aquatic invertebrates	What percentage of the proposed increase in detonations would occur in the EEA Complex and what percentage in the PRTR?	One hundred (100) percent of the proposed increase in detonations would take place on the Churchill and Harris Ranges on the EEA with no increase in detonations on barges on the PRTR.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.31-4.11	Munitions, aquatic invertebrates	Discuss the possibility of munitions fired into the PRTR burying organisms within sediment.	Individual benthic organisms may be buried if located at the point where a projectile enters the sediment or directly adjacent to it, but the benthic invertebrate community as a whole would be only minimally impacted, and localized impacts (e.g., increased turbidity) would be temporary. Benthic communities in the target areas are adapted to living in a turbid environment due to the high annual sediment accumulation rates, ranging from 0.50 to 0.75 in per year, with higher rates within the tidal portion of the Potomac River and lower rates in the estuary near the river's mouth (Knebel et al., 1981 <sup>7</sup> ). Locations where projectiles enter the sediment would be rapidly recolonized by individuals from neighboring areas.

<sup>6</sup> The Navy's Operational Range Clearance Policy for Navy Ranges (OPNAVINST 3571.4) is available at: <<http://doni.daps.dla.mil/OPNAV.aspx>>

<sup>7</sup> Knebel, H.J., Martin, E.A., Glenn, J.L., Needell, S.W. 1981. Sedimentary Framework of the Potomac River Estuary, Maryland. *Geological Society of America Bulletin* 92(1):578-589.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.32-4.11	Air and water monitoring	With respect to aquatic biological resources, does the Navy propose air and water monitoring of chemical simulants to evaluate impacts over time?	<p>The Navy does not propose air and water monitoring of chemical simulants.</p> <p>In 2003, water samples were collected immediately after a test under conditions similar to those proposed for future testing. No chemical simulant was detected in the water. Because of the rate of flow of the river, it is unlikely that further monitoring would detect any simulants related to NSWCDD's RDT&amp;E. The Maryland Department of the Environment determined that modeling suggested that the potential for aquatic toxicity was negligible during simulant testing (Carlson, Kent, pers. comm., July 7, 2003).</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.33- 4.11/6.0	Adaptive management	In the context of chemical simulant use, has the Navy considered an adaptive management approach to ecosystem management and incorporated it into the Proposed Action?	<p>The Navy has incorporated adaptive management into their Guidelines for Preparing Integrated Natural Resources Management Plans for Navy Installations (September 1998) on the basis that management actions should be treated as a scientific hypothesis to be tested. As more information becomes available, management actions are measured against the desired result and modifications may be necessary to achieve the objectives.</p> <p>Although there is no clear need for an ecosystem adaptive management approach for chemical and biological simulant testing because exposure concentrations would be nondetectable or detectable only at background levels, adaptive management for simulant testing would be considered if management actions are not meeting objectives.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.34-4.12	Birds, ingest bullets	Did the Navy consider the possibility of birds ingesting bullets or projectiles?	<p>The Navy considered the possibility of birds ingesting bullets. However, the bullets NSWCDD is using and would use in the future have not contained lead for 10 years (the DEIS incorrectly stated that lead was being used). Therefore, even if a bird were to ingest a bullet, the metals in the casing would not be bioavailable and would not be absorbed by the bird before being excreted.</p> <p>The possibility of any creature's ingesting an intact large-caliber gun projectile was not examined as projectiles would be deeply buried in the sediment. Even if a projectile were found at the surface of the sediment, it would be much too large for incidental ingestion by anything living on or near the Potomac River.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.35- 4.12/4.0	Lead in bullets and projectiles	Discuss whether bullets and projectiles contain lead and, if so, discuss impacts to the environment and biological resources.	As described in the response to F003.34, bullets currently used at NSWCDD and that would be used in the future do not contain lead. Historically, lead was a component of some of the large-caliber munitions and was selected as one of the munitions constituents evaluated in Appendix F of the EIS. The findings summarized in Tables 4.11-5, 4.11-6, 4.11-11, 4.12-1, and 4.13-1 indicated no adverse impacts to aquatic organisms, fish, or wildlife from lead or any other munitions constituent.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.36-4.12	Biological simulants	The basis of the determination that BSL-1 biological simulants are already naturally present in the area is not clear and needs more information.	<p>The ubiquitous presence of some of the biological simulants that may be used in testing strongly suggests that these organisms are likely to be found on the PRTR. For example, <i>Bacillus subtilis</i> is a widely adapted bacterial species capable of growing within many environments including soil, plant roots and the gastrointestinal tracts of animals (Earl et al., 2008). Population levels of <math>10^6</math> to <math>10^7</math> per gram of soil have been estimated for this species (USEPA, 1997). <i>Bacillus globigii</i> is also commonly found in soils, dust, air, water and wet surfaces (CRI, 2004).</p> <p>Based on the widespread distribution of <i>Bacillus</i> species, it is assumed that one or more species of this genus of bacteria would be present in the area.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.37- 4.12/4.0	USFWS input	<p>EPA commented that although the USFWS has not yet responded to the text cited below on page 4-173 for the DEIS, the Navy's effort to coordinate, their input or concurrence is important.</p> <p><i>"The use of chem/bio simulants would have negligible impacts on Potomac River birds. Based upon previous events and the modeling presented in Sections 4.4.1.2 and 4.11.1.4, simulant concentrations that Potomac River birds would be exposed to are predicted to be are well below levels that would cause toxicity to them. The use of BSL-1 biological simulants would have no effects on birds, as some of these organisms are already naturally present in the area."</i></p>	<p>The Navy coordinated with the USFWS' Virginia Field Office and Chesapeake Bay Field Office on the potential presence of ESA-listed species or suitable habitat for those species in the proposed project area.</p> <p>Text was added to Section 4.14 stating that "A USFWS Virginia Ecological Services Field Office online project review of the Proposed Action conducted by NSWCDD determined that the Proposed Action may adversely affect the sensitive joint-vetch (Wray, January 23, 2013; see Appendix G page G-83). This determination was the only outcome possible in the online review process, because suitable habitat exists for the sensitive joint-vetch within NSF Dahlgren and no recent surveys have been conducted that demonstrate that the species is not present on the installation. The USFWS Virginia Ecological Services Field Office concurred with the determination on February 19, 2013 (Drummond, February 19, 2013; see Appendix G page G-101). However, based on site- and project-specific information, the Proposed Action would have no effect on this species."</p> <p>Note that a biological assessment was prepared that investigated the impact of the proposed action, inclusive of chemical and biological simulant testing, on five aquatic species that occur within the PRTR and are on the Endangered Species List: the shortnose sturgeon, Atlantic sturgeon, green turtle, Kemp's ridley turtle, and loggerhead turtle. The National Marine Fisheries Service concurred that the proposed action may affect, but is not likely to adversely affect these species.</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.38-4.13	Semi-aquatic mammals, bullets	Would bullets impact the habitat of semi-aquatic mammals and would the animals be at risk?	<p>Semi-aquatic mammals such as muskrat, river otter, mink, and beaver are relatively unlikely to be found at the water's edge of a land range because of the high level of human activity. If they are occasionally found on the shoreline of the range, they are unlikely to be directly affected because only about 10 percent of the bullets fired enter the river and most of those would be immediately buried, isolating bullets from movement and exposure pathways. Bottom sediments would be temporarily disturbed, but habitats would not be impacted.</p> <p>When firing at targets in the river, NSWCDD employs protective measures to ensure that impacts to wildlife during testing are avoided when possible or are minimized. Before an activity begins, trained observers look for wildlife in the target area or test area, and alert operators if any are present. Either the test is postponed temporarily or the wildlife is startled to encourage movement out of the area. Trained observers watch for wildlife that may move into the target area or operations area during tests, and the test is stopped while they clear the area.</p>
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.39-3.2/4.2	EJ communities	The methodology used to identify environmental justice (EJ) communities creates a major underestimation of areas of potential EJ concern.	The methodology was revised consistent with the approach recommended in USEPA Region III's relevant comments. The revised discussion is presented in Section 3.2.4 of the EIS.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.40-3.2/4.2	EJ communities	There seems to be confusion as to the use of state or county minority or low income population plus 20 percent.	The use of minority and low-income population plus 20 percent was corrected. The revised discussion is presented in Section 3.2.4 of the FEIS.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.41-3.2/4.2	EJ analysis	The identification of the EJ population is so flawed that it makes the analysis inaccurate and invalid. The analysis needs to be redone.	The methodology was revised consistent with the approach recommended in USEPA Region III's relevant comments. The revised discussion is presented in Section 3.2.4 of the EIS.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.42-3.2/4.2	EJ communities	The correct application of the percent minority or low-income population percentage plus 20 percent of the value should be used.	The use of minority and low-income population plus 20 percent was corrected. The revised discussion is presented in Section 3.2.4 of the EIS.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.43-3.2/4.2	EJ analysis	In addition to state percentages, county percentages of minority and low-income populations should be used for comparison.	County percentages were added and are used both for comparison and to define minority and low-income community of concern thresholds.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.44-3.2/4.2	EJ analysis	Census tracts within the study area should be identified and their demographics should be used in the analysis.	Tables and figures were added to Section 3.2.4 to identify the census tracts and present their relevant demographics.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.45-3.2/4.2	EJ population	In addition to the statistics for each minority population that were presented separately, it may be helpful to add a column combining the minority populations.	A column that provides the total minority populations as percentages of the total county, study area, and state populations was added to Table 3.2-5.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.46-3.2/4.2	EJ data	It would be helpful to present tables with data at the census tract or block group, county, and state levels that show percentages of minority and low-income populations, appropriate data for children and the elderly, and any other appropriate demographic.	Tables were added to Section 3.2.4 that provide relevant demographic data at the census tract, county, and state levels.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.47-3.2/4.2	Protection of children populations	Provide the rationale for the census tract value plus an additional 10 percentage points as the protection of children's benchmark.	There is no established protection of children benchmark or threshold. The Navy chose the census tract value plus 10 percent as the protection of children threshold because we judged this to be a substantial, but conservative (i.e., stringent/protective) increment that would be indicative of unusual concentrations of children. The 10 percent increment indicates 13 census tracts—about 22 percent—out of the 59 occupied tracts in the study area as having unusual concentrations of children.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.48-3.2/4.2	EJ analysis	As the methodology used to identify EJ communities is flawed, it cannot be determined if other aspects of the assessment are valid.	The methodology was revised consistent with the approach recommended in USEPA Region III's relevant comments. The revised discussion is presented in Section 3.2.4 of the EIS.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.49-3.2/4.2	EJ analysis	The EJ analysis needs to be done at the census tract level or preferably at the block group level.	The EJ analysis was done at the census tract level. Block group-level data is not yet available from the 2010 Census.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.50-3.2/4.2	Protection of children	The statement that the Proposed Action would not disproportionately affect children as RDT&E activities would not have a greater effect on children than adults, appears to disagree with the breadth and scope of EO 13045, as children may suffer disproportionately from environmental health risks and safety risks.	The protection of children discussion in EIS Section 4.2 was revised to explain that, based on the analyses presented in the EIS on air quality, noise, health and safety, and surface water, no disproportionate environmental health and safety risks specific to children are expected.

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.51- 3.2/4.2	Protection of children	It is not clear how the Navy came to the conclusion that no high or disproportionate adverse impacts would be borne by children in census tract 8758.01, despite an unusual concentration of children.	The protection of children discussion in EIS Section 4.2 was revised to explain that, based on the analyses presented in the EIS on air quality, noise, health and safety, and surface water, no disproportionate environmental health and safety risks specific to children are expected.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.52-4.8	Health impact assessment	Considering the significant increase in activity proposed, the unknown threshold of exposure which may negatively impact human health, the wide span of potential impact, and the cumulative impacts from other activities in the area, the Proposed Action warrants consideration of a health impact assessment.	<p>A Public Health Assessment (PHA) of NSF Dahlgren was conducted in 2006 by the Agency for Toxic Substances and Disease Registry (ATSDR, 2006). The purpose of the assessment was to determine if community members could come into contact with NSF Dahlgren-related environmental contaminants and evaluate whether that contact could cause adverse health effects. ATSDR did not identify any potential exposure that would be expected to cause health effects for the local community.</p> <p>The screening level human health risk assessment provided in Section 4.8 of the EIS found that ordnance activities posed no increase in risk to people, supporting the findings of the PHA. The number of projectiles fired into the PRTR will not increase under the preferred alternative, so there would be no change to any of the conclusions. Risks from electromagnetic energy and high energy lasers would be limited to the personnel in the immediate vicinity conducting the tests and are covered by SOPs. Potential impacts from chemical and biological simulants have been covered in detail in the responses to F003.8 through F003.25 and would not impact human health. Therefore, the conclusion of the PHA, as quoted below, is still valid. <i>"In general, people do not have significant access to the environmentally contaminated sites. The occasional exposure that does occur is expected to be well below levels of health concern."</i></p> <p>Given the PHA and the screening level assessments contained in the EIS, a Health Impact Assessment (HIA) to identify the potential health effects of a new proposed action, it is not required, as there are no human health impacts to local communities expected, inclusive of minority, tribal or low-income communities. Cumulative impacts from other activities in the area would have no impact or negligible or minor recoverable impacts (see Table 5-3).</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.53-5.0	Cumulative impacts	It would be helpful to depict the contributing projects on a map.	A new figure – Figure 5-1 – that depicts the locations of the contributing actions was added to EIS Chapter 5.
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.54-5.2	Cumulative impacts	Considering that ongoing activities by other agencies are contributing to the incremental increase in impacts to resources, is there a coordination effort among organizations—especially DoD agencies—to monitor impacts?	NSWCDD coordinates with Marine Corps Base Quantico, Fort A.P. Hill, and NAS Patuxent River concerning noise impacts from ordnance use. NSWCDD coordinates airspace use with NAS Patuxent River. Coordination with respect to water quality, air quality, and protected species takes place with state agencies. .
Barbara Rudnick, US Environmental Protection Agency, Region III	F003.55-3.10	Buffering capacity definition	The text box that defines buffering capacity is missing text.	The missing text was restored in Section 3.10.1.2 of the EIS.



Name/Agency	Comment Number	Comment Category	Comment	Response
Lindy Nelson, US Dept of the Interior	F004.1-2.0/4.11-14	Recovery of materials, chemical composition of ordnance	The information in Chapters 2 and 4 on how the ordnance, chemical, and biological materials will be recovered after they are discharged and the chemical composition of ordnance is not sufficient to assess the potential to affect fish and wildlife populations.	<p>NSWCDD's Range Management Plan and the Navy's Operational Range Clearance Policy for Navy Ranges<sup>8</sup> includes requirements for such activities as the removal, disposal, and recycling of unexploded ordnance (UXO), range scrap, and debris on land ranges (see response to comment F003.29). Ordnance tested on the PRTR is not recovered. The potential discharges from ordnance were evaluated in detail. Appendix F contains detailed fate and transport modeling of munitions constituents. A screening-level ecological risk assessment was then performed to assess potential effects of munitions constituents from ordnance testing on aquatic life, fish, and wildlife. Table 4.11-11 provides ratios of modeled fish concentrations to fish screening toxicity concentrations and Tables 4.12-1 and 4.13-1 present hazard quotients calculated for representative bird and mammal receptors to assess the potential to affect wildlife. The screening level ecological risk assessment determined that ordnance RDT&amp;E activities posed no increased risks to fish or wildlife.</p> <p>Chemical and biological simulants would not be recovered. A comparison of exposure levels of chemical simulants to toxicological effect levels was performed, as summarized in Table 4.11-13. All exposure concentrations were orders of magnitude below effects levels. The Maryland Department of the Environment has determined that modeling suggests that the potential for toxicity following chemical simulant testing is negligible (Carlson, Kent, MDE, pers. comm., July 7, 2003).</p> <p>The biological simulants proposed for testing are present naturally in the environment (see response to comment F003.36) and do not pose a risk to fish and wildlife. The increase in these organisms from simulant testing is miniscule in relation to overall levels (e.g., <i>Bacillus subtilis</i> population levels are estimated to be 10<sup>6</sup> to 10<sup>7</sup> per gram of soil) and would not affect fish and wildlife populations.</p>

<sup>8</sup> The Navy's Operational Range Clearance Policy for Navy Ranges (OPNAVINST 3571.4) is available at: <<http://doni.daps.dla.mil/OPNAV.aspx>>

Name/Agency	Comment Number	Comment Category	Comment	Response
Lindy Nelson, US Dept of the Interior	F004.2-2.0/4.9-10	Chemical composition of ordnance	We suggest that the chemical content of the ordnance be identified along with its effect on water and sediment composition.	A detailed analysis of chemical content is provided in Appendix F. Munitions constituent concentrations were compared to water and sediment quality guidelines in Tables 4.11-5 to 4.11-8. The comparisons of modeled concentrations to water and sediment criteria and guidelines showed that all concentrations were well below target levels.
Lindy Nelson, US Dept of the Interior	F004.3-4.10-14	Chemical composition of ordnance	The DEIS should describe how long the ordnance will remain in the environment, the potential for ingestion by wildlife or fish, and the cumulative impact of the material on land, wetlands, and in water, and the effects of the proposed higher frequency of exposure.	<p>A screening-level ecological risk assessment was performed for fish and wildlife, as described in the response to F004.1.</p> <p>There are no munitions ranges near wetlands and therefore, there would be no direct effects on wetlands from RDT&amp;E activities as described in the response to F003.29.</p> <p>The potential for ingestion of bullets by birds is discussed in the response to F003.34. The increase in small-caliber projectiles would not adversely impact wildlife or fish. The number of large-caliber projectiles is consistent between all alternatives and consequently there would be no difference in frequency of exposure from ordnance. Fish and wildlife exposure to other activities would be minimal and increased frequency would not impact fish or wildlife.</p>
Lindy Nelson, US Dept of the Interior	F004.4-4.4/4.10-14	Chem/bio simulants concentrations	We suggest that the DEIS provide the expected concentrations of chemical and biological simulants in air and water, toxicity to exposed organisms, duration of exposure, and potential cumulative effects of the proposed higher frequency of exposure.	<p>As described in the response to F003.25, maximum predicted chemical simulant concentrations were compared to aquatic toxicity values in Section 4.11.1.4 and were orders of magnitude below levels at which adverse effects may occur.</p> <p>Biological simulant modeling will be performed before outdoor testing takes place when information on the quantity and type of simulant and the dispersion method for each test have been determined. In addition, biological simulant detectors will be tested indoors prior to outdoor testing.</p> <p>There would be no cumulative exposure to chemical or biological simulants, as any exposures would be brief, limited to 5 to 10 minutes, and would occur at different places and times so that the likelihood of repeated exposure is miniscule.</p>
Kristine L. Brown, USAG Fort A.P. Hill	F005.1-5.1	Natural heritage resources	The information on Fort A.P. Hill's 1993 biological diversity inventory is not current and a re-inventory was completed after the FEIS was published.	Fort A.P. Hill was contacted and new information was noted in Section 5.1.4.

Name/Agency	Comment Number	Comment Category	Comment	Response
Kristine L. Brown, USAG Fort A.P. Hill	F005.2-5.2	ACUB acreages	Only cite the approximately 35,000-ac Army Compatible Use Buffer (ACUB) goal, as the per-priority zone acreages are not current. Since 2006, ACUB has contributed to the permanent preservation of approximately 10,000 ac. All ACUB projects undergo NEPA review.	The subject discussion in EIS Section 5.2.1 was revised accordingly.
Kristine L. Brown, USAG Fort A.P. Hill	F005.3-5.2	Potomac land conservation	The Northern Virginia Regional Conservation Forum has not met for some time and may not be active.	Correspondence with the Virginia Department of Conservation and Recreation confirmed that the regional forum no longer is active; the last meeting having been held in 2010. The subject discussion in EIS Section 5.2.2 was revised accordingly.
Kristine L. Brown, USAG Fort A.P. Hill	F005.4-3.5	Noise modeling	Were PK15 noise levels modeled; if not, why?	Peak sound pressure level (PK) 15 levels (peak noise from firing a gun or a detonation that will not be exceeded 85% of the time) were modeled early in the EIS process. However, given the BNOISE2 model limitations when using a water-reflective propagation surface where the detonation occurs, the PK15 contours were overly conservative, particularly after the air shock wave reached the land and then propagated over the land surface. Therefore, based on comparison between the measurements and the model-predicted levels (e.g., see Table 3.5-11), the Navy determined that the PK50 metric (half the time a gun will create a peak noise above this level and half the time below this level) is more representative of the event peak-noise conditions around the range evaluated in the EIS. The US Army Center for Health Promotion and Preventive Medicine (CHPPM), the agency which oversees the implementation of BNOISE 2 for individual projects, concurred with this determination.
Kristine L. Brown, USAG Fort A.P. Hill	F005.5-3.5	Gun-firing noise	It would be very beneficial to Fort A.P. Hill to be notified prior to the firing of 8"/55 guns, as our northern-boundary neighbors could report to Fort A.P. Hill associated noise complaints.	The Navy added Fort A.P. Hill to the list of individuals and entities to be notified prior to NSWCDD's firing of 8"/55 guns.

Name/Agency	Comment Number	Comment Category	Comment	Response
<b>State Agency (code 'S')</b>				
Glen A. Smith, Maryland Transportation Authority	S001.1-0.0	General	The DEIS was received and the MdTA has no comments at this time.	Comment noted.
Linda C. Janey, Maryland State Clearinghouse	S002.1-0.0	General	The DEIS was received and passed on to the Maryland departments of Natural Resources, the Environment, Transportation, St. Mary's and Charles counties, and the Maryland Historical Society. They have been requested to provide comments by September 18, 2012.	Comment noted.
Amanda R. Degen, Maryland Dept of the Environment	S003.1-0.0	General	The Proposed Action is generally consistent with our plans, programs, and objectives contingent upon certain actions being taken as noted in the following comments.	Comment noted.
Amanda R. Degen, Maryland Dept of the Environment	S003.2-4.7	Petroleum storage tanks	Above ground or underground petroleum storage tanks must be installed and maintained in accordance with applicable state and federal laws and regulations.	The Proposed Action does not involve installation of petroleum storage tanks. NSF Dahlgren manages petroleum storage tanks in accordance with applicable state and federal laws and regulations, as described in Section 3.7.3.3.
Amanda R. Degen, Maryland Dept of the Environment	S003.3-4.7	Petroleum storage tanks	If the Proposed Action involves demolition, above ground or underground petroleum storage tanks, their contents, and any contamination must be removed.	The Proposed Action does not involve demolition.
Amanda R. Degen, Maryland Dept of the Environment	S003.4-4.7	Solid waste	Any solid waste generated must be properly disposed of at a permitted solid waste acceptance facility or recycled.	NSF Dahlgren disposes of and/or recycles generated solid waste in accordance with Navy and Virginia regulations. Waste management is covered in Section 3.7 of the EIS.
Amanda R. Degen, Maryland Dept of the Environment	S003.5-4.7	Hazardous wastes	Facilities that generate or handle hazardous wastes or propose to do so should contact the Waste Diversion and Utilization Program.	NSF Dahlgren and NSWCDD have in place a number of programs, plans, and processes to safely use, transport, handle, store, and dispose of hazardous material and hazardous waste, as described in Section 3.7.3.
Amanda R. Degen, Maryland Dept of the Environment	S003.6-4.7	Environmental site assessment	As the Proposed Action may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs that involve environmental site assessment may provide valuable assistance.	The Proposed Action does not involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property.

Name/Agency	Comment Number	Comment Category	Comment	Response
Robert Sadzinski, Maryland Dept of Natural Resources	S004.1-0.0	General	The Proposed Action is generally consistent with our plans, programs, and objectives contingent upon certain actions being taken as noted in the following comments.	Comment noted.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.2-4.1	Coastal zone management	Maryland recommends the No Action Alternative to minimize coastal resource impacts and coastal use conflicts.	Comment noted.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.3-4.1	Coastal zone management	Note that the Maryland coastal consistency determination navigation comments focus on the noise policy.	Comment noted.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.4-4.1	Coastal zone management	A Charles County commenter noted a potential use conflict with a marina and development project on the Maryland side of the Potomac River.	Per the response to comment L004.1, boat traffic from the proposed marina would be able to proceed along the Maryland shore when range restrictions are in effect because the range boundary does not extend to the shoreline (see Figure 1-5 of EIS). Because Range Control works with boaters to minimize delays by allowing vessels to cross the river during test breaks and set-ups, crossing the river usually results in only a short delay. The additional hours during which access to the PRTR would be restricted are not expected to materially alter the conditions for recreational boating on the Potomac River, as described in Section 4.2. Further, NSWCDD has ongoing communications with the developer of the planned Villages at Swan Point.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.5-4.1	Coastal zone management	Increased training and testing activities may conflict with other activities in the Potomac River, such as recreational and commercial fishing, recreational boating, and War of 1812-related events.	The RDT&E activities are not expected to significantly alter the conditions for marine commercial freight movements, commercial fishing, or recreational boating on the Potomac River, as described in Sections 4.2.2.2 and 4.2.3.2. Likewise, increased activities are not expected to significantly alter the conditions for War of 1812-related events.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.6-4.12	Bald eagle nests	The Department of Natural Resources no longer tracks bald eagle nests; therefore, the applicant should refer to the National Bald Eagle Management Guidelines and should consult with the US Fish and Wildlife Service.	As discussed in Section 3.14.4, NSF Dahlgren's bald eagle management practices are outlined in the installation's <i>Bald Eagle Management Plan</i> and are implemented in cooperation with VDGIF and USFWS to ensure protection of the species and compliance with the Bald and Golden Eagle Protection Act. Management includes the protection of documented nesting and foraging habitat, the monitoring of nesting activity and success, and the enforcement of the Bald Eagle Protection Guidelines for Virginia developed by the USFWS and VDGIF and the National Bald Eagle Guidelines. Requests for deviations from these guidelines must be approved by USFWS and VDGIF.

Name/Agency	Comment Number	Comment Category	Comment	Response
Robert Sadzinski, Maryland Dept of Natural Resources	S004.7-4.12	Waterfowl concentration and staging area	Facility is near a waterfowl concentration and staging area. If there is to be construction of water-dependent facilities or an increase in noise levels, please contact the Wildlife and Heritage Service for technical assistance.	<p>The Proposed Action does not involve construction of water-dependent facilities.</p> <p>The proposed increase in detonations on the EEA's Harris and Churchill Ranges and in small-arms firing on the Machine Gun Range would lead to minor noise impacts. However, noise modeling of Alternative 2 indicates that 65 A-weighted day-night average decibel noise levels would not extend beyond the Harris and Churchill Ranges within the EEA and would extend only slightly from the Machine Gun Range into the creek. These resulting noise contours are barely different from the No Action Alternative levels. Large-caliber gun noise levels would not change but on up to 10 days a year would extend farther downriver than under existing conditions. The resulting potential impacts to waterfowl would be negligible.</p>
Robert Sadzinski, Maryland Dept of Natural Resources	S004.8-4.5	People impacted by noise	It may be beneficial to initiate a group of people impacted by increased noise levels to recommend workable solutions.	NSF Dahlgren and NSWCDD have ongoing meetings with surrounding communities, including the Swan Point and Cobb Island homeowners associations, and the Colonial Beach mayor and chamber of commerce, to discuss activities and talk about potential noise impacts from those activities.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.9-4.1	Beach habitat	Beaches on the site provide likely terrapin and horseshoe crab spawning habitat; therefore, disturbance to the beach should be minimized.	The Proposed Action does not involve construction that would disturb beaches. As discussed in Section 4.9, ground disturbance from explosive detonations would be confined to the EEA ranges. Other RDT&E activities would not result in ground disturbance. Based on the relatively limited number of PRTR usage hours requiring range control boats and the small number of boats deployed, the impact from boat wakes is anticipated to have negligible impacts on shoreline sediment erosion.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.10-4.11	Largemouth bass	This area of the Potomac River is downstream of pristine largemouth bass habitat. If shoreline erosion control projects are warranted, we request that the DNR Fisheries Service be contacted.	The Proposed Action does not involve shoreline erosion control projects.

Name/Agency	Comment Number	Comment Category	Comment	Response
Robert Sadzinski, Maryland Dept of Natural Resources	S004.11-4.11	Submerged aquatic vegetation	Submerged aquatic vegetation (SAV) is adjacent to the site. Impacts to SAV should be avoided and impacts in the vicinity of SAV beds should be minimized.	<p>There is little SAV present in the MDZ and upper LDZ and few plants are found in deeper waters of the PRTR where most large-caliber gun projectiles would be fired, as discussed in Section 4.11. Therefore, the potential for direct hits of vegetation, disturbance of vegetation adjacent to direct hits, or settlement of shell fragments onto plants in the PRTR is limited.</p> <p>It is unlikely that the SAV community would be affected by the increase in any of the RDT&amp;E activities, as direct contact with these activities would be limited-to-none and any indirect effects would be negligible.</p>
Robert Sadzinski, Maryland Dept of Natural Resources	S004.12-4.2	Commercial fishing	Increased exclusion of commercial and recreational boaters may significantly impact some commercial fishermen. Therefore, we recommend soliciting comments directly from this group, and a web-based and text message system with river and creek restrictions updated daily.	The additional hours during which access to the PRTR would be restricted are not expected to materially alter the conditions for marine commercial freight movements, commercial fishing, or recreational boating on the Potomac River, as described in Section 4.2. NSWCDD's range website posts river and creek restrictions regularly. Efforts to survey fishermen for the EIS met with few responses; however, those fishermen that did respond indicated no issues with NSWCDD's activities.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.13-4.11	Oyster bars	Natural oyster bars are near the property. Impacts should be minimized and the department will provide specific recommendations upon request.	<p>As described in Section 4.11, there is a low probability for direct hits, as there are few oyster bars in the fairly deep waters of the primary target areas (oyster bars are found closer to shore in shallow areas). The proposed action would have negligible, long-term, direct and indirect, negative impacts on oyster bars, as described in Section 4.11.</p> <p>The MDNR was contacted for specific recommendations and provided mapping of natural oyster bars, SAV beds, and waterfowl concentration areas in the vicinity of NSF Dahlgren (maps of oyster bars and SAV beds were included in the DEIS). Mr. Sadzinski indicated that the comment concerning specific recommendations is more applicable to shoreline projects involving construction than this EIS, which does not include construction.</p>
Robert Sadzinski, Maryland Dept of Natural Resources	S004.14-4.10	Sea level rise	The site is highly susceptible to sea level rise; therefore, we recommend a proactive plan to address sea level rise.	As the Proposed Action does not involve construction of facilities, a proactive plan to address sea level rise is not pertinent to this EIS.

Name/Agency	Comment Number	Comment Category	Comment	Response
Robert Sadzinski, Maryland Dept of Natural Resources	S004.15- 4.11/4.14	In-river habitat	The Potomac River in this vicinity is very important striped bass and anadromous fish species spawning habitat, and Atlantic sturgeon may occur. Disturbance to in-river habitat should be seasonal and minimized, and, generally, no instream work likely to result in suspended sediments is allowed between 15 February and 15 June, inclusive.	Disturbance of sediments when projectiles impact the river bottom results in localized, short-term increases in levels of suspended sediments that would not affect levels of suspended solids found in the water column, as discussed in Section 4.11. As the Proposed Action does not involve construction, there would be no instream work likely to result in suspended sediments.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.16-4.2	Navigation	The US Coast Guard should be consulted concerning Potomac River mainstem boating modifications.	33 Code of Federal Regulations § 334.230 authorizes the Commander, NSWCDD to restrict access to the PRTR danger zones. Consultation with the US Coast Guard is not required, but a copy of the DEIS was sent to the Coast Guard for review. No comments were received.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.17-4.11	Fish and shellfish tissue analysis	Recommend continued fish and shellfish tissue analysis to determine if increased activities will be detrimental to fish.	As described in Sections 4.8, 4.10, and 4.11, the results of the human health and ecological Range-Specific Screening-Level Risk Assessment (RSSRAs) indicate that input of munitions constituents of potential concern from munitions testing in the PRTR are orders of magnitude below concentrations that could cause adverse effects to human health or the environment. As the use of large-caliber guns and projectiles would remain at current levels, impacts to surface waters would not increase. No further analyses are required at this time.
Robert Sadzinski, Maryland Dept of Natural Resources	S004.18-4.10	Point and nonpoint pollution	Investigate and rectify point and nonpoint pollution areas.	Hazardous materials and waste management at NSWCDD are described in detail in Section 3.7 of the EIS. There are no point or nonpoint pollution areas of concern at NSWCDD.



Name/Agency	Comment Number	Comment Category	Comment	Response
Robert Sadzinski, Maryland Dept of Natural Resources	S004.19-4.13	Magnetic and electric field exposure	Determine (model) the potential effects to wildlife due to magnetic and electric field exposure.	<p>As discussed in Section 4.13.1.2, EM energy dissipates exponentially with distance from the energy source; hence wildlife outside the test area would encounter very low doses of EM energy. The magnetic field levels modeled are shown in Figure 4.8-1, well below IEEE exposure limits at 80 feet, which is set at the guideline for time-varying magnetic field exposure to pacemakers of 0.833 Gauss (see Section 4.8.1.2).</p> <p>Although there are no controls to exclude wildlife from the safety zones during activities, spotters do watch out for wildlife prior to a test, and the test is stopped if animals are sighted. The probability of wildlife's entering test areas at the exact time of emission or firing would be very low.</p> <p>EM energy activities under all alternatives would have negligible, short-term, direct, negative impacts and no indirect impacts on NSF Dahlgren's wildlife.</p>
Maryland Dept of Planning	S005.1-4.1	Plans, programs, and objectives	The Proposed Action is consistent with our plans, programs, and objectives.	Comment noted.
Maryland Dept of Planning	S005.2-4.1	Plans, programs, and objectives	The Proposed Action is consistent with the Maryland Economic Growth, Resource Protection, and Planning Act; the Smart Growth and Neighborhood Conservation Policy; and our plans, programs, and objectives.	Comment noted.
Maryland Dept of Planning	S005.3-4.1	Plans, programs, and objectives	The Proposed Action is consistent with the requirements of Maryland Code, State Finance and Procurement Articles 5-7B-02, 03, 04, and 05 concerning priority funding areas.	Comment noted.
Maryland Dept of Transportation	S006.1-0.0	General	As far as can be determined at this time, the Proposed Action has no unacceptable impacts on the plans or programs of the department.	Comment noted.
Maryland Historical Trust	S007.1-4.6	Historical properties	The Proposed Action would have no adverse effect on historical properties.	Comment noted.

Name/Agency	Comment Number	Comment Category	Comment	Response
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.1-3.14	Conservation sites, bald eagle	The Little Creek, Gambo Creek, Gambo Creek South, and Tetotum Flats Conservation Sites are located within the project area and have all been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at these sites is the bald eagle, which is classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF). The Department of Conservation and Recreation recommends coordination with the VDGIF to ensure compliance with the Virginia endangered Species Act.	As discussed in Section 3.14.4, NSF Dahlgren's bald eagle management practices are outlined in the installation's <i>Bald Eagle Management Plan</i> and are implemented in cooperation with VDGIF and USFWS to ensure protection of the species and compliance with the Bald and Golden Eagle Protection Act. Management includes the protection of documented nesting and foraging habitat, the monitoring of nesting activity and success, and the enforcement of the Bald Eagle Protection Guidelines for Virginia developed by the USFWS and VDGIF and the National Bald Eagle Guidelines. Requests for deviations from these guidelines must be approved by USFWS and VDGIF.
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.2-3.14	Natural area preserves	There are no State Natural Area Preserves under Department of Conservation and Recreation's jurisdiction in the project vicinity.	Comment noted.
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.3-3.14	State-listed plants and insects	The Proposed Action would not affect any documented state-listed plants or insects.	Comment noted.
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.4-3.14	Natural heritage information updates	Contact the Department of Conservation and Recreation for natural heritage information updates if a significant amount of time passes before it is utilized.	Comment noted.
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.5-4.10	Stormwater management	As no construction is proposed, the Division of Stormwater Management has no comment.	Comment noted.
Roberta Rhur, Virginia Dept of Conservation and Recreation	S008.6-0.0	General	Virginia Department of Conservation and Recreation divisions other than the Divisions of Natural Heritage and Stormwater Management, whose comments are noted above, have no comments regarding the Proposed Action.	Comment noted.
Ellie Irons, Virginia Dept of Environmental Quality	S009.1-4.10	Water resources, wastewater	It appears from the DEIS that impacts to water resources would be negligible and likely would not require permitting. Wastewater generation would not increase and the Navy's sewage treatment plant would continue to meet current and future wastewater requirements.	Comment noted.

Name/Agency	Comment Number	Comment Category	Comment	Response
Ellie Irons, Virginia Dept of Environmental Quality	S009.2-4.10	Surface water, wetlands	Recommends that surface water and wetland impacts be avoided to the maximum extent practicable, and recommends practices to minimize unavoidable impacts with respect to crossing streams, operating machinery and construction vehicles, constructing trenches, excavating wetlands, designing erosion and sedimentation controls, placing heavy equipment in wetlands, restoring temporarily-disturbed wetlands, storing material temporarily in wetlands, marking non-impacted surface waters near clearing, grading, or filling activities, and employing measures to prevent spills of fuels or lubricants into state waters.	NSWCDD is committed to protecting the environment while carrying out its mission, and avoids surface water and wetland impacts to the maximum extent possible. As the Proposed Action does not involve construction, the recommended impact minimization practices do not apply, except for employing measures to prevent spills. An NSF Dahlgren spill-prevention control and countermeasures plan is in place for NSWCDD facilities and was last updated on September 29, 2009.
Ellie Irons, Virginia Dept of Environmental Quality	S009.3-4.10/10.H	Surface water, wetlands	Providing all necessary Virginia Water Protection Permit authorizations are obtained and complied with, Department of Environmental Quality, Northern Regional Office concurs that the Proposed Action will be consistent with the requirements of the VWPP program and thus consistent with the Wetlands Management enforceable policy of the Virginia Coastal Zone Management Program.	Virginia Water Protection Permit authorizations are not required, as the Proposed Action does not involve excavation, draining, filling or dumping, flooding or impounding, or significant alternation or degradation of wetlands; or water withdrawals, dredging, or discharge of fill in surface waters.
Ellie Irons, Virginia Dept of Environmental Quality	S009.4-10.H	Surface water	The Department of Environmental Quality, Northern Regional Office does not disagree with the Navy's determination that the Proposed Action would be consistent with the Point source Pollution Control enforceable policy of the Virginia Coastal Zone Management Program.	Comment noted.
Ellie Irons, Virginia Dept of Environmental Quality	S009.5-10.H	Subaqueous lands	The Virginia Marine Resources Commission did not respond to the Department of Environmental Quality's request for comments and, as such, did not disagree with the Navy's determination that subaqueous lands would not be affected.	Comment noted.

Name/Agency	Comment Number	Comment Category	Comment	Response
Ellie Irons, Virginia Dept of Environmental Quality	S009.6-3.7/4.7	Hazardous materials and waste management	The Department of Environmental Quality, Division of Land Protection and Revitalization reviewed its database and found a number of waste facility sites. The proximity of the sites and potential impact to the project should be evaluated further.	NSWCDD and NSF Dahlgren implement federal and state regulations for control of waste material. NSF Dahlgren administers an ongoing Installation Restoration Program (see EIS Section 3.7.4) that investigates potential impacts of solid waste management units.
Ellie Irons, Virginia Dept of Environmental Quality	S009.7-4.7	Hazardous materials and waste management	Encourages the Navy to implement pollution prevention principles in all construction projects and facilities, including the reduction, reuse, and recycling of all solid wastes generated. Generation of hazardous wastes should be minimized and hazardous wastes should be handled in accordance with regulatory requirements.	The Proposed Action does not involve construction. NSF Dahlgren and NSWCDD have in place a number of programs, plans, and processes to safely use, transport, handle, store, and dispose of hazardous material and hazardous waste, as described in EIS Section 3.7.3.  NSF Dahlgren implements a waste-minimization plan aimed at reducing the use of, controlling, and managing hazardous materials and reusing and recycling solid wastes. All waste is handled in accordance with VDEQ regulatory policy.
Ellie Irons, Virginia Dept of Environmental Quality	S009.8-3.14/4.14	Protected species, farmland preservation	The Virginia Department of Agriculture and Consumer Services did not respond to the Department of Environmental Quality's requests for comments.	Comment noted.
Ellie Irons, Virginia Dept of Environmental Quality	S009.9-3.4/4.4	Air quality, open burning	The Navy should contact King George County officials to determine what local requirements exist concerning open burning.	Open burning is allowed in King George County. NSF Dahlgren uses open burning for fire control measures, which also supports NSWCDD's RDT&E activities. Open burn/open detonation (OB/OD) units are monitored and managed in accordance with VDEQ guidance and the RCRA Subpart X Permit, as described in Section 3.7.
Ellie Irons, Virginia Dept of Environmental Quality	S009.10-3.1/4.1	Aviation	The Virginia Department of Aviation did not respond to the Department of Environmental Quality's requests for comments.	Comment noted.
Ellie Irons, Virginia Dept of Environmental Quality	S009.11-3.1/4.1	Regional concerns	The George Washington Regional Commission did not respond to the Department of Environmental Quality's requests for comments.	Comment noted.
Ellie Irons, Virginia Dept of Environmental Quality	S009.12-3.1/4.1	Local concerns	King George County did not respond to the Department of Environmental Quality's requests for comments.	Comment noted.

Name/Agency	Comment Number	Comment Category	Comment	Response
Ellie Irons, Virginia Dept of Environmental Quality	S009.13-10.H	Coastal zone management	Based on review of the Navy's consistency determination, and the comments and recommendations submitted by agencies administering the enforceable policies of the Virginia Coastal Zone Management Program, the department concurs that the Proposed Action is consistent, to the maximum extent practicable, with the program. The Navy must ensure that the actions is constructed and operated in accordance with all applicable federal, state, and local laws and regulations, and the department encourages the Navy to consider the Advisory Policies of the program.	Comment noted.
Virginia Dept of Game and Inland Fisheries	S010.1-4.14	Protected species, bald eagle	Recommends that the Navy coordinate with the department and with the US Fish and Wildlife Service regarding any activities resulting in bald eagle habitat alterations within 660 ft of any active bald eagle nest, or within the designated concentration zone along the Potomac River upstream of NSF Dahlgren.	<p>As discussed in Section 3.14.4, NSF Dahlgren's bald eagle management practices are outlined in the installation's <i>Bald Eagle Management Plan</i> and are implemented in cooperation with VDGIF and USFWS to ensure protection of the species and compliance with the Bald and Golden Eagle Protection Act. Management includes the protection of documented nesting and foraging habitat, the monitoring of nesting activity and success, and the enforcement of the Bald Eagle Protection Guidelines for Virginia developed by the USFWS and VDGIF and the National Bald Eagle Guidelines. Requests for deviations from these guidelines must be approved by USFWS and VDGIF.</p> <p>The Potomac River Bald Eagle Concentration Area is adjacent to the Upper Danger Zone (UDZ), on which RDT&amp;E activities not involving ordnance occasionally would take place. The Proposed Action would not result in bald eagle habitat alterations within the designated concentration area.</p>
Virginia Dept of Game and Inland Fisheries	S010.2-4.14	Protected species, bald eagles	Although increased activities generating more frequent loud noise may temporarily affect nesting, roosting, or foraging eagles, those occupying territory at Dahlgren likely are habituated to loud noise emanating from Dahlgren.	The establishment and increase in the bald eagle population on the installation over the last 25 years supports this comment.

Name/Agency	Comment Number	Comment Category	Comment	Response
Virginia Dept of Game and Inland Fisheries	S010.3-4.14	Protected species, bald eagles	Recommends adherence to the currently-approved integrated natural resources management plan for Dahlgren, including adherence to protective measures for bald eagles and their habitats.	NSWCDD's RDT&E activities are guided by the <i>Integrated Natural Resources Management Plan, Naval Support Facility Dahlgren, Dahlgren, Virginia</i> (NSF Dahlgren, 2007), including the protective measures for bald eagles and their habitats. In addition, as discussed in Section 3.14.4, NSF Dahlgren's bald eagle management practices are outlined in the installation's <i>Bald Eagle Management Plan</i> and are implemented in cooperation with VDGIF and USFWS to ensure protection of the species and compliance with the Bald and Golden Eagle Protection Act.
Virginia Dept of Game and Inland Fisheries	S010.4-4.11	Anadromous fish use areas	As the Potomac River, Upper Machodoc Creek, Gambo Creek, and Williams Creek have been designated anadromous fish use areas, recommends that any construction, restoration, or relocation activities within these waters be coordinated with the department and with NOAA Fisheries.	The Proposed Action does not involve construction, restoration, or relocation activities.
Virginia Dept of Game and Inland Fisheries	S010.5-4.11	Anadromous fish	Recommends adherence to the currently-approved integrated natural resources management plan for Dahlgren, including adherence to protective measures for anadromous fish and their habitats.	NSWCDD's RDT&E activities are guided by the <i>Integrated Natural Resources Management Plan, Naval Support Facility Dahlgren, Dahlgren, Virginia</i> (NSF Dahlgren, 2007), including protective measures for anadromous fish and their habitats.
Virginia Dept of Game and Inland Fisheries	S010.6-10.H	Fisheries management	The Proposed Action is consistent with the fisheries management section of the Virginia Coastal Zone Management Program, provided the Navy adheres to all necessary best management practices.	Comment noted.
Virginia Dept of Historic Resources	S011.1-4.6	Historic properties	The Navy has consulted on the Proposed Action and the department believes that the action will have no adverse effect to historic properties listed in or eligible for the National Register of Historic Places and the Virginia Landmarks Register.	Comment noted.
Virginia Department of Health, Office of Drinking Water	S012.1-4.10	Drinking water	The Proposed Action is not likely to affect drinking water resources.	Comment noted.

Name/Agency	Comment Number	Comment Category	Comment	Response
<b>Local Government (code 'L')</b>				
St. Mary's County, Board of County Commissioners	L001.1-3.1/4.1/5.0	County plans, aviation	Forwarded a copy of the St. Mary's County Regional Airport Master Plan Update executive summary for review and incorporation into the final document record.	The St. Mary's County Regional Airport Master Plan Update executive summary was reviewed, and discussions regarding the county's plans for the regional airport were added to EIS Section 3.1 and Chapter 5.
St. Mary's County, Board of County Commissioners	L001.2-3.1/4.1/5.0	County plans, aviation	The County intends to ensure that the Proposed Action does not impact either current or future availability of instrument approaches and other airspace or operational matters concerning the regional airport.	Comment noted. The Proposed Action would not change the hours that special use airspace (SUA) is restricted annually and is not expected to have any direct or indirect impacts on civilian aviation. A discussion was added to Chapter 5.
St. Mary's County	L002.1-4.5	Noise monitoring locations	Notes lack of noise monitoring locations for the upper Lower Danger Zone bordering St. Mary's County.	Noise-measurement sites are located around NSF Dahlgren and along the PRTR Middle Danger Zone (MDZ) to monitor peak-noise levels during gun-firing and detonation events. Large guns are mostly fired into the MDZ and, as proposed, no more than 10 days a year into the upper Lower Danger Zone (LDZ).  NSWCDD is investigating establishing a noise measurement site on Cobb Island, which would be closer to the upper LDZ than existing measurement sites. Also, NSWCDD uses hand-held noise meters to augment permanent noise meters and has the flexibility to monitor noise levels farther downriver than the fixed noise measurement stations.
Charles County	L003.1-0.0	General	The Proposed Action is generally consistent with our plans, programs, and objectives contingent upon certain actions being taken as noted in the following comments.	Comment noted.
Steven R. Ball, Charles County Dept of Planning & Growth Management	L004.1-4.2	Boat traffic, marina proximity	Increased RDT&E activities could have adverse effects on Swan Point. Activities could cause conflicts due to the future increase in boat traffic in the test range and the proximity of the new Swan Point marina to the test range.	Boat traffic from the proposed marina would be able to proceed along the Maryland shore when range restrictions are in effect because the range boundary does not extend to the shoreline. Because Range Control works with boaters to minimize delays by allowing vessels to cross the river during test breaks and set-ups, crossing the river usually results in only a short delay. The additional hours during which access to the PRTR would be restricted are not expected to materially alter the conditions for recreational boating on the Potomac River, as described in Section 4.2. Further, NSWCDD has ongoing communications with the developer of the planned Villages at Swan Point.

Name/Agency	Comment Number	Comment Category	Comment	Response
Steven R. Ball, Charles County Dept of Planning & Growth Management	L004.2-4.5	Noise, vibration, night testing	Calls attention to concerns raised by residents of the Potomac River communities of Cobb Island and Swan Point regarding noise, vibration and the addition of night testing.	As noted in the response to comment S004.8, NSWCDD has developed a noise management program that aims to minimize noise impacts. Additional night testing would be limited to laser and non-ordnance activities. No ordnance is currently fired or detonated at night, and no nighttime ordnance use is proposed in the future.  Under the Proposed Action, large-caliber gun firing, which is the noisiest activity, would not increase in the future. The annual number of small-arms firings and detonations would increase, but the noise impacts associated with these two types of activities are projected to remain primarily within the boundaries of the installation.
Gary B. Whipple, St. Mary's County Dept of Public Works and Transportation	L005.1- 3.1/4.1/5.0	County plans, aviation, cumulative impacts	Per the Regional Airport Master Plan Update, in conjunction with the FAA and the Maryland Aviation Administration, the county is working to achieve an airport reference code designation of B-II, with a non-precision instrument (NPI) approach of 1/2 mi for Runway 11, which will be extended by 1,200 ft, and an NPI approach of 1 mi for Runway 29.	Discussions regarding the county's plans for the regional airport were added to EIS Section 3.1 and Chapter 5. The use of the SUA for NSWCDD's RDT&E activities is not expected to have any direct or indirect impacts on civilian aviation.
Gary B. Whipple, St. Mary's County Dept of Public Works and Transportation	L005.2- 3.1/4.1/5.0	County plans, aviation, cumulative impacts	Consistent with the county's comprehensive plan, the county intends to encourage development of commuter air travel services and shuttle connections to airport with regional, national, and international connections to provide, in part, a certified, precision all-weather approach system.	Discussions regarding the county's plans for the regional airport were added to EIS Section 3.1 and Chapter 5. The use of the SUA for NSWCDD's RDT&E activities is not expected to have any direct or indirect impacts on civilian aviation.
Gary B. Whipple, St. Mary's County Dept of Public Works and Transportation	L005.3- 3.1/4.1/5.0	County plans, aviation, cumulative impacts	Forwarded a copy of the current, August 2012 Airport Layout Plan.	Discussions regarding the county's plans for the regional airport were added to EIS Section 3.1 and Chapter 5. The use of the SUA for NSWCDD's RDT&E activities is not expected to have any direct or indirect impacts on civilian aviation.



Name/Agency	Comment Number	Comment Category	Comment	Response
<b>Non-government Organization (code 'NGO')</b>				
Bob Elwood, Potomac River Association	NGO001.1-4.8	Biological simulants	Can biological simulants be genetically differentiated from the naturally-occurring organisms and, if needed, identified as originating from NSWCDD biological defense activities?	The small quantities of BSL-1 biological simulants used would not be genetically distinct, and there is no need to identify them as originating from NSWCDD.
Bob Elwood, Potomac River Association	NGO001.2-4.0/5.0	Cumulative impacts	What is the difference between no significant impact and negligible impact, and have a whole lot of negligible impacts ever become a significant impact?	<p>'Negligible impact' indicates that an environmental impact is of low intensity or severity. 'No significant impact' indicates a determination that an environmental impact is of comparatively low concern, given the low intensity of the impact and considering where the impact occurs.</p> <p>The various impact determinations, of negligible or other intensity or severity, reached in the EIS are for independent resources and, for the proposed RDT&amp;E activities, are not cumulative across resources. However, multiple impacts to a single resource resulting from multiple actions potentially are cumulative and, therefore, are evaluated in Chapter 5 of the EIS.</p>
Norman Chlosta, Swan Point Property Owners Association	NGO002.1-2.0	DoD budget	What Department of Defense budget assumptions is the Navy making with respect to funding the proposed increased RDT&E activities?	The EIS presents the expansion of RDT&E activities that could be conducted with full funding. Available funding for RDT&E will dictate the actual increases.
Norman Chlosta, Swan Point Property Owners Association	NGO002.2-2.0	Chem/bio simulants	Why can Ben Gay-like simulants simulate toxins and how does the Navy make that extrapolation? What is the worth of doing this kind of testing when there is no known link?	Methyl salicylate, or oil of wintergreen, is used in many household products such as Ben Gay. Methyl salicylate has also been used as a simulant for chemical warfare agents because as a vapor in the air, laboratory tests show that it responds like a known chemical warfare agent – mustard gas – to an infrared detector. Use of low-toxicity simulants allows NSWCDD to develop technology to counter chem/bio terrorism by developing early detection and warning systems.
Norman Chlosta, Swan Point Property Owners Association	NGO002.3-2.2	Alternatives development	What are the program managers' future requirements analyses based on? Are they based on threats or wishful thinking?	Parameters such as projected global threats, homeland security, and technological developments influence the RDT&E that will take place in the future. Flexibility is required in RDT&E to accommodate those requirements.

Name/Agency	Comment Number	Comment Category	Comment	Response
Norman Chlosta, Swan Point Property Owners Association	NGO002.4-1.0/2.0	Night and bad weather testing	What is the basis for doing night testing and bad weather testing?	As noted in Section 1.1, some activities (but none using ordnance) would take place under conditions in which activities are now rarely/never conducted, such as at dusk, dawn, and night and in adverse weather, to ensure that equipment and materials work effectively, even in less-than-ideal conditions.
<b>Public (code 'P')</b>				
Philip Lehman	P001.1-3.8	Health and Safety	Discuss NSWCCD's safety record over perhaps the past 5-10 years as it relates to range activities: noise complaints, structural damage, wildlife and human illnesses/injuries/deaths related to release of simulants, EM, laser or ordnance - both worker and non-employee (community) related.	<p>NSWCDD's commitment to health and safety has resulted in an excellent safety record. EIS Section 3.8 includes the following information "<i>Thanks to this commitment to safety, there have been no fatalities attributable to NSWCCD's RDT&amp;E activities in more than 40 years.</i>" Based on review of records for the past 10 years, there have been no illnesses or injuries attributable to outdoor activities. This information was added to EIS Section 3.8.</p> <p>There have also been no adverse effects to fish or wildlife populations related to RDT&amp;E activities in the last decade.</p> <p>Noise and vibration monitoring was conducted at six historical properties along the PRTR in November 2009 (see Appendix D) and included wall vibration measurements. Maximum vibration levels measured at the six historical structures were found to be below 0.5 in/sec, the level at which minor structural damage may begin to occur. This monitoring program confirmed that no buildings beyond NSF Dahlgren or along the PRTR experience vibration levels that could result in structural damage.</p> <p>To monitor and control noise from its outdoor RDT&amp;E activities and, thereby, reduce noise complaints from surrounding communities, NSWCCD has developed and implemented a noise management process, which is summarized in Section 3.5.3.5 and reproduced in full in Appendix C. The Public Affairs Office closely monitors and records any complaints involving noise and vibration (structural damage).</p>

Name/Agency	Comment Number	Comment Category	Comment	Response
Jean Public	P002.1-11	The Environment, Biological Resources, and Protected Species	There should be no growth in destruction caused by the Navy. The Navy should be training in America without hurting the environment. The fish and turtles should not be bombed and killed.	<p>The Navy is committed to protecting the environment, as stated in our policy for Environmental Protection, Natural Resources, and Cultural Resources Programs (SECNAVINST 5090.8A): "In support of the national defense mission and to restore, protect, and enhance the quality of the environment for current and future generations, it is Department of the Navy policy to integrate environmental protection, natural resources, and cultural resources programs considerations into all Department of the Navy operations and activities, as appropriate."</p> <p>Following this policy, NSWCDD provides valuable habitat for a wide range of terrestrial and aquatic species, as discussed in EIS Sections 3.11 to 3.14.</p> <p>Section 4.11 evaluates potential impacts on fish from ordnance testing and concluded that the probability of a direct hit by a projectile would be low and impacts to fish would be negligible. No aircraft bombs have been tested in the Potomac River Test Range since 1957 and therefore there is no danger of aquatic life being bombed.</p> <p>Ordnance testing under all alternatives does not overlap with the distribution of sea turtles (see Figure 4.14-1) and consequently there would be no possibility of a sea turtle's being hit by a projectile.</p>
Peter M. Fahrney, M.D.	P003.1-0.0	PRTR testing	Personal opinion is that ballistic testing on the PRTR should be phased out.	Comment noted.
Peter M. Fahrney, M.D.	P003.2-3.4	Release of explosives or toxins into air	Concern about explosives or other toxins being released into the air periodically at Pumpkin Neck.	The occasional smoky plumes seen at Pumpkin Neck – the EEA – result from the burning of kerosene and gasoline, used for fast cook-off tests of munitions. They are not associated with explosive detonation. The fuels are added to water in a 30-ft-by-30-ft pan and are burned beneath ammunition to test their stability. On average, NSWCDD uses approximately 2,500 gal of kerosene and 40 gallons of gasoline for each fast cook-off test, which occur about six times a year. Emission products from burning kerosene and gasoline are the same as the emission products from an oil fired furnace or a gasoline engine.

Name/Agency	Comment Number	Comment Category	Comment	Response
Virginia O'Brien	P004.1-4.12	Ordnance and wildlife	Will all bullets be recovered or will there be an indoor range instead? Concern about lead in increased small arms fire impacting wildlife in the area.	See response to comment F003.35-4.12/4.0.
Belinda and Kevin Keller	P005.1-4.5	Noise and vibration	Would like to know what procedures exist for homeowners to follow if homes are damaged by ordnance testing. As after years of repeated vibrations all structures will suffer.	The Navy follows NSWCDD Instruction 5100.6, "Outdoor Noise Management Process" (contained in Appendix C), in an effort to minimize noise and vibration effects on the surrounding communities. The Public Affairs Office (PAO) closely monitors and records any complaints involving noise and vibration. There is a toll-free number 866-359-5540 for noise comments and questions. Each noise complaint is investigated and appropriate changes to the noise management process are evaluated and implemented as necessary. Complaints follow the process identified in NSWCDD Instruction 5726.1A, "Community Inquiries or Complaints Related to Test Range Operations and Ordnance-Related Noise and Damage." If a property is damaged, the owner can file a "Tort Claim for Damages" with the Navy's Tort Claim Unit in Norfolk.

Name/Agency	Comment Number	Comment Category	Comment	Response
Belinda and Kevin Keller	P005.2-0.0	General	<p>The EIS does not provide the confidence needed to support expansion. As stated, findings are inconclusive, indecisive, and repetitive: "... may affect, but is not likely to adversely affect ...". When something is deemed not likely, a possibility remains.</p> <p>For us, the consequences of current activities are minimally tolerant, and most emphatically we do not favor expanding activities at dusk, dawn, night, and in inclement weather as proposed.</p>	<p>Comment noted. We have tempered many of the impact statements with qualifiers such as "negligible" based on experience with the same or similar tests or on research on the effects of the type of tests proposed. In most cases, the negligible amount of impact take place when the test occurs and it is fleeting. We also consider the environment where the small amount of impact may occur in weighing the severity of the impact – for example, Dahlgren's land ranges regularly sustain impacts from testing and further testing does not impair any precious resources. Similarly, the size of the Potomac River and daily flushing greatly lessens the impact on any one area. We weigh many factors in making these judgments, and even though "negligible" may not convey absolute certainty, using modifiers like these attests to the decision making process we have gone through in arriving at each and every conclusion and our reluctance to assert that no impact would occur when a very small amount may.</p> <p>With respect to testing at dawn, dusk, night, and in inclement weather, additional testing would be limited to lasers and non-ordnance activities. No ordnance is currently fired or detonated at night, and no nighttime ordnance use is proposed in the future.</p> <p>Lasers are being tested now over water in these conditions with little impact on the public other than to cause vessels transiting the mouth of Upper Machodoc Creek to pause for short periods. Adding other non-ordnance (non-explosive) tests in the future would have similar effects.</p>
Charlotte Simpson	P006.1-4.5	Noise and vibration	Concerned about noise and vibration, and would like to see a monitor on Cobb Island full time.	NSWCDD is investigating placing a noise meter on Cobb Island. Any noise and vibration complaints should be reported to the NSWCDD Public Affairs Office at 866-359-5540.
Charlotte Simpson	P006.2-4.5	Noise and vibration	I object to night testing.	Comment noted. No ordnance would be tested at night, so there would be no noise from gun firing or detonations. As noted in the response to comment P005.1, some night testing of lasers takes place now with little effect on the public.
Charlotte Simpson	P006.3-4.5	Noise and vibration	I know that the Navy will come down and look at cracked windows and broken stuff, but I have never heard of the Navy paying for anything.	See responses to comments P005.1 and P006.1.

Name/Agency	Comment Number	Comment Category	Comment	Response
Warren Veazey	P007.1-1.6	Notice of range restrictions	The Navy should post at public marinas notices, with a map of the range, informing jet skis and boats of testing so as to avoid having to stand down.	NSWCDD provides a pamphlet to marinas that describes the range and gives Range Control contact information. We also maintain a website that provides: the Range Schedule; a toll-free Range/Weapons Testing hotline for daily information on range activities (877-845-5656) and test schedules. This information is available at: <a href="http://www.navsea.navy.mil/nswc/dahlgren/RANGE/rangeschedule.aspx">http://www.navsea.navy.mil/nswc/dahlgren/RANGE/rangeschedule.aspx</a>
Warren Veazey	P007.2-4.4/4.8	Fast cook-off	A friend of mine who lives just down river, is concerned about the big plumes of diesel smoke when NSWCDD does burns on Pumpkin Neck, although the plumes have not yet come over his house.	See response to comment P003.2.
Warren Veazey	P007.3-1.6	Railgun	A sound meter should be used during railgun firings and firings should be announced to employees at NSF Dahlgren.	Comment noted. Both internal and external installation noise sound levels are taken during most railgun firings. Personnel in areas that could be affected by railgun firing noise are notified the day of the firings and before each firing.
Dreda Newman	P008.1-1.6	Monitoring	How is the use of chem/bio simulants and lasers going to be monitored by other entities than the Navy?	Testing of chem/bio simulants and lasers would take place on Navy ranges. As they would be contained on these ranges, there is no need for additional monitoring by other entities.  As a protective measure, prior to each chem/bio operation, coordination takes place with NSF Dahlgren Environmental and the Maryland Department of the Environment and the Virginia Department of Environmental Quality, as applicable, concerning the types and quantities of simulants proposed for use (Section 6.2.2).
Dreda Newman	P008.2-1.6/4.8	Accidents and deaths	Is the public informed of accidents or deaths on NSF Dahlgren?	See response to comment P001.1.
Christopher Wiggins	P009.1-1.6	Aircraft	Maybe it would be prudent to inform the public if aircraft are being used.	Comment noted.

**FEDERAL AGENCY  
COMMENTS**

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DEPARTMENT OF THE NAVY  
**RECEIVED**  
NAVAL SURFACE WARFARE CENTER  
DAHLGREN DIVISION  
6149 WELSH ROAD SUITE 203  
DAHLGREN VIRGINIA 22448-5130  
AUG 16 2012

## Virginia Field Office

IN REPLY REFER TO

5090  
Ser CX8/042

14 AUG 2012

From: Commander, Dahlgren Division, Naval Surface Warfare Center

Subj: NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION OUTDOOR  
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION ACTIVITIES  
DRAFT ENVIRONMENT IMPACT STATEMENT

Encl: (1) Outdoor Research, Development, Test and Evaluation  
Activities Draft Environmental Impact Statement

1. Enclosure (1) is an electronic copy of the Draft Environmental Impact Statement (EIS) prepared by the Department of the Navy, Naval Surface Warfare Center, Dahlgren Division (NSWCDD) for your review and comment. The draft EIS evaluates the effects of expanding outdoor research, development, test, and evaluation activities within the Potomac River Test Range and Explosives Experimental Area Complexes, the Mission Area, and Special-Use Airspace at Naval Support Facility Dahlgren.

2. The Navy will conduct three public hearings to receive oral and written comments on the draft EIS. Federal, state, and local agencies, elected officials, and other interested individuals and organizations are invited to be present or represented at the public hearings. Public hearings will be held on:

a. 11 September 2012 at the Newburg Volunteer Rescue Squad and Fire Department, 12245 Rock Point Road, Newburg, MD 20664.

b. 12 September 2012 at the A. T. Johnson Alumni Museum, 18849 Kings Highway, Montross, VA 22520.

c. 13 September 2012 at University of Mary Washington-Dahlgren Campus, 4224 University Drive, King George, VA 22485.

3. All hearings will be held from 6 p.m. to 8 p.m. and will begin with a presentation followed by public comments. All venues are wheelchair accessible. Anyone needing special assistance, such as a sign language interpreter, please contact

Subj: NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION OUTDOOR  
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION ACTIVITIES  
DRAFT ENVIRONMENT IMPACT STATEMENT

the NSWCDD Public Affairs Office at 540-653-8154 or e-mail  
dlgr\_nswc\_eis@navy.mil.

4. Written comments may be submitted at the hearings or mailed  
during the comment period to:

Naval Surface Warfare Center Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117  
Attn: Code C6 Fax: 540-653-4679  
E-mail: dlgr\_nswc\_eis@navy.mil.

5. All written comments must be received by 1 October 2012 to  
ensure they become part of the official record and are assessed  
and considered as part of the final EIS.

6. If you have any questions about the enclosed statement or  
need additional information, please contact the NSWCDD Public  
Affairs Office at 540-653-8154 or e-mail dlgr\_nswc\_eis@navy.mil.

7. Thank you for your participation in the EIS process.



M. H. SMITH

Distribution:  
(See Attached Sheets)



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
6669 Short Lane  
Gloucester, Virginia 23061



APR 13 2012

Greetings:

Due to increases in workload and refinement of our priorities in Virginia, this office will no longer provide individual responses to requests for environmental reviews. However, we want to ensure that U.S. Fish and Wildlife Service trust resources continue to be conserved. When that is not possible, we want to ensure that impacts to these important natural resources are minimized and appropriate permits are applied for and received. We have developed a website, [http://www.fws.gov/northeast/virginiafield/endspecies/Project\\_Reviews\\_Introduction.html](http://www.fws.gov/northeast/virginiafield/endspecies/Project_Reviews_Introduction.html), that provides the steps and information necessary to allow landowners, applicants, consultants, agency personnel, and any other individual or entity requiring review/approval of their project to complete a review and come to the appropriate conclusion.

F001.1

The website will be frequently updated to provide new species/trust resource information and methods to review projects, so refer to the website for each project review to ensure that current information is utilized.

If you have any questions about project reviews or need assistance, please contact Kimberly Smith of this office at (804) 693-6694, extension 124, or [kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov). For problems with the website, please contact Mike Drummond of this office at [mike\\_drummond@fws.gov](mailto:mike_drummond@fws.gov).

Sincerely,

Cindy Schulz  
Supervisor  
Virginia Field Office



-----Original Message-----

From: Dargle, Peter E LTC USARMY USAG (US)

[<mailto:peter.e.dargle.mil@mail.mil>]

Sent: Monday, August 27, 2012 8:10 AM

To: dlgr\_nswc\_eis

Subject: Environmental Impact Statement Review (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Fort AP Hill is in receipt of your Environmental Impact Statement and have initiated review of the document to ensure all associated Fort AP Hill information noted in the document is current & valid. We will submit any recommended changes and/or updates on the document as necessary to the appropriate Point of Contact. Ms. Terry Banks from the AP Hill Environmental Division is our lead in the review process.

] F002.1

Fort AP Hill appreciates being part of this review process and trust that a favorable outcome is on the horizon. Should we have to engage in a similar effort in the future, we will certainly include Dahlgren, Naval Surface Warfare Center in our planning and review process.

Please forward my comments to CAPT Smith as appropriate and thank you again for including us in this effort.

v/r

Peter E. Dargle

LTC, AR

USAG Fort A.P. Hill Commander

Fort A.P. Hill, Virginia

"The Best Training & Support - Anywhere!"

(804) 633-8206

DSN: 578-8205

Classification: UNCLASSIFIED

Caveats: NONE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

October 1, 2012

Mr. M. H. Smith  
Captain, U.S. Navy Commander  
Department of the Navy  
Naval Surface Warfare Center Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117

Re: Outdoor Research, Development, Test, and Evaluation Activities Naval Surface Warfare Center, Dahlgren, Virginia Draft Environmental Impact Statement (CEQ #20120267)

Dear Mr. Smith:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Outdoor Research, Development, Test and Evaluation (RDT&E) Activities within the Potomac River Test Range and Explosives Experimental Area Complexes, the Mission Area and Special-Use Airspace at Naval Support Facility Dahlgren in Virginia.

The Proposed Action would expand the Naval Surface Warfare Center Dahlgren Division's (NSWCDD) RDT&E activities within the Potomac River Test Range (PRTR) and Explosives Experimental Area (EEA) Range complexes, the adjoining Mission Area, and the Special-Use Airspace (SUA). These RDT&E activities include outdoor operations that require the use of ordnance, electromagnetic energy, lasers, chemical and biological simulants. The average number of events that could take place annually (with the exception of large-caliber gun firing events) would increase above recent levels. To ensure that equipment and materials work effectively, even in less-than-ideal conditions, some activities would take place under conditions in which activities are now rarely/never conducted, such as at dusk, dawn, and night and in adverse weather.

The purpose of the Proposed Action is to enable NSWCDD to meet current and future mission-related warfare and force-protection requirements by providing RDT&E of surface ship combat systems, ordnance, lasers and directed energy, force-level warfare, and homeland and force protection. The need for the Proposed Action is to enable the Navy and other stakeholders to successfully meet current and future national and global defense challenges required under 10 U.S.C. §5062(d) by developing a robust capability to carry out assigned RDT&E activities on range complexes, in the Mission Area, and in SUA at NSF Dahlgren.



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In addition to the No Action Alternative, the Navy proposes two action alternatives, Alternative 1 and Alternative 2 (the Preferred Alternative). Alternative 1 includes annual increases of 325 percent in small arms firing, 5 percent in detonations, 20 percent in EM energy events, 108 percent in laser events, 400 percent in chemical/biological events, and 16 percent in PRTR hours of use above recent levels. Alternative 2 includes annual increases of 400 percent in small arms firing, 21 percent in detonations, 39 percent in EM energy events, 142 percent in laser events, 483 percent in chemical/biological events, and 33 percent in PRTR hours of use above recent levels.

EPA understands the purpose and need for the proposed action for the Navy's Outdoor RDT&E activities. However, as a result of our review of the DEIS, EPA has concerns with impacts to air, water, biological resources, environmental justice, children's/human health and cumulative impacts. A detailed description of these concerns is presented in the Technical Comments (enclosed) for your consideration. EPA rated the DEIS an EC-2 (Environmental Concerns/Insufficient Information), which indicates that we have environmental concerns regarding the proposal and that there is insufficient information in the document to fully assess the environmental impacts of this project. A copy of EPA's rating system is enclosed for your information.

F003.1

Thank you for providing EPA with the opportunity to review this project. EPA would appreciate the opportunity to discuss some of the topics and questions raised in the Technical Comments. If you have questions regarding these comments, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,



Barbara Rudnick  
NEPA Team Leader  
Office of Environmental Programs

Enclosure (2)



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## Technical Comments

### Alternatives

Page 4-6 states, "Unlike the No Action Alternative, Alternative 1 would support the recommendation from the RSIP to promote NDW as an RTD&E center that stands out among other regions, since it would allow NSWCDD to better accommodate new and emerging RDT&E needs and requirements. Because it would result in NSWCDD's making better use of its facilities at NSF Dahlgren, Alternative 1 would also support the RSIP's recommendation to maximize existing facilities for highest and best use." Page 4-10 states, "Alternative 2 would better support the recommendations of the RSIP to promote NDW as an RTD&E center that stands out among other regions and maximize existing facilities for the highest and best use than would Alternative 1." EPA is not certain that the proposed activities would not pose an impact to human and environmental health at the quantities proposed. In addition, there is no distinct reason to selecting Alternative 2 as the Preferred Alternative since both (Alternative 1 and 2) meet the needs and goals of the Navy. Thus, EPA suggests considering a more conservative approach such as phasing in of increased activities and questions whether the additional increase in activities from Alternative 2 would be worth the added risks to environment and human health.

F003.2

F003.3

### Small Arms Activities

As the DEIS states (page 2-11), "As is the case today, much of the future small arms firing would take place indoors, but some must be done outdoors." The average annual activities under the No Action Alternative would result in 6,000 bullets, Alternative 1 proposes 25,500 bullets, and Alternative 2 proposes 30,000 bullets. What is the ratio of bullets fired indoors versus outdoors for each alternative?

F003.4

The DEIS states, "Bullets will be fired at targets on land that will trap them and over the river at targets up to 4,000 yards from shore where the bullets will enter the river and not be recovered." Considering the increase in the number of bullets proposed, is it possible to add catch basins/netting to the river targets to capture the bullets so as not to sink to the river bottom?

F003.5

Page 1-24 states, "Most bullets fired are inert – made of solid metal with no explosive filler – but some are explosive." With a maximum number of bullets proposed (30,000), what percent of projectiles to be fired from the PRTR land ranges into the Potomac River would be inert and what percentage would be live explosives?

F003.6

### Electromagnetic Energy

Proposed Activities using electromagnetic energy both low-powered and high-powered should be evaluated by the Federal Communications Commission (FCC) for safety. The Distribution List did not include the FCC. Please coordinate activities with the FCC to determine and confirm safe exposure levels for hazards of electromagnetic radiation to fuel, ordnance and personnel.

F003.7

### Chemical Simulants

While it is true that the chemicals proposed for use in the DEIS have low-to-moderate toxicities, they are not without risk (some more than others). Even chemicals that are designated as "relatively non-toxic" can cause harm at high enough doses. So, the important point is not so much which chemicals are being used, as how much of those chemicals are being released and who is being exposed.

F003.8

There is no information in the report on possible human receptors, but Section 4 of the DEIS does provide modeled data on the maximum concentrations expected for a few of the chemical simulants. The predicted concentrations are very high, both at the time of release and 10 minutes later -- high enough to produce adverse effects in exposed individuals, such as irritation (respiratory, eye, and dermal). (Note that Figure 4.4-1 indicates that the concentration of DEM in air decreases to zero after approximately five minutes, but this is not supported by Table 4.4-2, Modeled Maximum Air Concentration after 10 Minutes.)

F003.9

F003.10

To allow the military base to fulfill its task, EPA recommends the Navy 1) provide adequate worker safety (in the form of personnel protective equipment), 2) conduct real-time air monitoring during release activities and 3) ensure that individuals not involved in testing are restricted from areas affected by releases.

F003.11

### Biological Simulants

A few of the biological agents proposed for testing are, in fact, pathogenic to humans; these are *B. atrophaeus* and *Aspergillus niger*. If available, other similar, non-pathogenic simulants should be used instead. If not, the steps described above for chemical simulants should be considered. Note, however, that some organisms can persist in the environment for a very long time; consequently, these precautions may not fully protect individuals from future exposures. Of particular concern, are the impacts to sensitive individuals who are more at risk than the "healthy adult" used in your analysis.

F003.12

Page 2-21 states, "All of the sensor-testing described in the preceding section could be repeated with the introduction of interferents, smokes, or obscurants. Examples of these include fog oil, PEG 200, poly alpha olephin, paints, fuels, and cleaners." What is the interaction of these chemicals with the chemical and/or biological agents proposed? What are the risks? Again, EPA suggests that the Navy conduct real-time air monitoring at the time of release.

F003.13

### Air Quality

As stated on page 3-55, "Consequently, the general conformity rule does not apply to the Proposed Action within this nonattainment area since no change in emissions would occur." Page 3-59 states, "All chemical simulants previously used and proposed for future use are not considered criteria pollutants under the CAA and are not hazardous air pollutants." In addition, "Concentration levels modeled in 2002 for each simulant were within available NIOSH





guidelines, and there were no potential air quality effects from releasing these chemicals during testing. Additional modeling and testing performed in 2003, 2005, and 2009 showed no significant impacts from the testing of chemical simulants. There were no observable environmental effects during or after testing (Bossart, letter, February 9, 2006; NSWCDL, 2004; NSWCDL, 2005; NSWCDL, 2009).” The analyses conducted were at the No Action Alternative levels. The increase in chemical simulants proposed for Alternative 1 and 2 is significantly greater. EPA questions whether the significant increase in the quantity of chemical simulants proposed would produce the same results? Also, will the Navy continue to conduct modeling and testing? How frequently? If measurable results are found, what action(s) would the Navy take to ensure the safety of human health and the environment?

F003.14

F003.15

The DEIS determined that with a maximum increase of 483% for chemical/biological defense events and the addition of biological simulants, which may be mixed with chemical simulants, there would be negligible, long-term, direct and indirect, negative air quality impacts. Again, since historical modeling and testing has been performed at the No Action Alternative levels, it seems difficult to assume that the same determination would result with a much greater simulant concentration proposed (combined with emissions from other activities).

F003.16

In addition, page 4-173 states, “There is no research on synergistic effects between low toxicity chemical and BSL-1 biological simulants most likely because given the low level of risk from both elements no synergistic effects are expected.” The basis of this statement is unknown so it cannot be assumed that impacts would not occur. Although an air conformity analysis is not necessary, EPA reiterates the need to conduct real-time air monitoring during release activities to assess exposure to human health.

F003.17

The Navy should disclose at what threshold would there be concern for air quality impacts, especially when considering increased activities? The DEIS should also discuss risks to human health as a result of chemical and biological interactions. The DEIS did not address this nor did it discuss monitoring commitments to ensure that proposed activities would, in fact, result in negligible impacts. Please discuss if the Navy plans to analyze/monitor air quality in combination with an increase in activities.

F003.18

F003.19

F003.20

#### Surface Water/Water Quality Wetlands

The DEIS states that RDT&E activities would have little contact with surface water resources and minimal potential to affect them. Low concentrations of munitions constituents and simulants would enter surface water with predicted concentrations below standard detection levels. Chemical/biological defense activities would have no direct impacts and negligible, short-term, indirect, negative impacts. Naturally-occurring biosafety level (BSL)-1 organisms used in bio defense tests would not affect surface water. Page 4-112 states “No modeling was performed for biological simulants, as NSWCDL would only use BSL-1 simulants. BSL-1 bacteria, fungi, viruses, and proteins rarely cause reactions or diseases, and many are ubiquitous in the environment.” EPA understands why no modeling was performed for biological simulants and why the Navy derived that there is no synergistic interaction with chemical and biological



simulants. However, when considering the quantity of biological simulants and activities proposed (cumulatively), EPA questions whether there will be negligible impacts to water quality and aquatic resources at the Alternative 2 level over the course of time.

F003.21

Page 4-114 states that “For each chemical simulant event, the point concentrations of simulants that potentially could settle on the water surface or on land and be dispersed into surface waters would not increase. Simulants entering the PRTR and other surface waters would be rapidly diluted to well-below-detection levels.” The DEIS states on page 4-116, “Simulant releases would be spaced so that no land or water area would be exposed multiple times to the same simulant”. In addition, “Concentrations of chemical simulants that would reach land would be very low – well below concentrations that have been shown to cause adverse effects – as would the concentrations that could be deposited on terrestrial vegetation or to which wetland communities would be exposed.” How long can these simulants remain active in the environment? What spacing time is required to ensure that the land and water areas are not exposed multiple times to the same simulant? Is the dispersal rate greater within moving water? If so, is there concern that resources like wetlands, etc where there is less movement of water will have a greater impact?

F003.22

F003.23

Page 4-115 states, “Residues from the land-based firing of munitions and detonation of explosives that remain on land after operational range surface clearance could enter wetlands and floodplains via surface water or soil runoff and shallow groundwater discharge. Although some residues may migrate into these resources areas, they are expected occur at concentrations below most standard detection levels.” The DEIS states that chemical/biological simulant exposure would be very low also. This then raises the question as to the cumulative impact to resources from all activities proposed. Also, what contingency plan will the Navy implement if its activities do result in considerable impact to resources? What threshold of chemical and/or biological simulant concentration would pose a concern for surface water, water quality, and wetlands when considering increased activity?

F003.24

F003.25

Page 3-258 states, “The MDNR has routinely sampled water quality year round in the Chesapeake Bay and the Potomac River (as well as other tidal tributaries to the Chesapeake) since 1985 (MDNR, 2010). Five MDNR monitoring stations are located in the vicinity of NSF Dahlgren and the PRTR, as shown on Figure 3-10-4. The MDNR collects data 12 to 20 times a year at the four Potomac River stations (RET2.2, RE2.4, LE2.2, and LE2.3) and 16 times a year at Station CB5.3 in the Chesapeake Bay, near the mouth of the Potomac.” When viewing Figure 3.10-4, the MDNR monitoring stations are located closer to Maryland. Does Virginia sample water quality in the Chesapeake Bay and the Potomac River which would be in closer proximity to NSWCDD?

F003.26

Page 3-269 discusses turbidity and it states, “As river discharge data for the Potomac River were not available for a gage in the vicinity of the PRTR, data from the United States Geological Survey (USGS) monitoring station near Washington, DC (Station 01646502) were



used in the analysis. The analysis indicated negligible correlations for the three downstream stations – LE2.2, LE2.3, and CB5.3.” Can this be considered a fair account of the turbidity in the PRTR area?

F003.27

Page 3-273 of the DEIS states, “Analysis of the probability-based sampling data indicated that in terms of the condition of the health of the benthic communities, the Potomac River is in poor condition.” In addition (page 3-274) states, “The B-IBI scores within the Potomac River that are marginal or that meet the Chesapeake Bay benthic community restoration goals are relatively low compared to scores within the rest of the Chesapeake Bay watershed.” Because of significant efforts to improve the health of the Chesapeake Bay, it is important to discuss the Navy’s commitment to monitoring their activities in terms of water quality and water resources to ensure that the Navy’s activities do not impede efforts to restoring the Bay and to be accountable to that which is outlined in Executive Order 13508, *Strategy for Protection and Restoring the Chesapeake Bay Watershed*.

F003.28

### Biological Resources

Page 4-135 states, “NSWCDD removes fired military munitions and range scrap and debris that are exposed on the ground surface or partially buried.” How does the Navy remove munitions? Are munitions removed from wetlands, if entered?

F003.29

Page 4-156 states, “Most detonations would take place on the EEA Complex’s land ranges and would have negligible impact on aquatic invertebrates.” What percentage of the increase will occur in the EEA Complex and what percentage in the PRTR? In addition, page 3-177 states that “A total of approximately 33 million lbs of constituents are associated with the 343,815 total rounds fired into the PRTR, as recorded in the log books.” Discuss the possibility of burying organisms within sediment.

F003.30

F003.31

Page 4-159 (Vegetation, Plankton, Aquatic Invertebrates, and Fish) states, “...the quantities of chemical simulants released into the environment and the resulting concentrations of simulants in the river would be well below levels that could cause adverse effects.” Please state whether the Navy proposes any monitoring (both air and water). There should be a monitoring plan in place to evaluate if impacts will occur over time. In addition, EPA questions whether the Navy has considered an Adaptive Management Approach. An Adaptive Management Approach is the ecosystem management counterpart to “learning from experience.” These two concepts have two essential elements in common: 1) a feedback element that gathers and evaluates information about current performance (of an action or activity), and 2) an adjustment element that responds to feedback information by being able to alter future performance when needed.” Please identify if the Navy has considered this approach and incorporated it into the Proposed Action.

F003.32

F003.33

Page 4-161 (Potomac River Birds), did the Navy considered the possibility of whether the birds can ingest bullets or projectiles?

F003.34



Page 4-172, Please identify whether the bullets/projectiles contain lead and if so discuss impacts to the environment and/or biological resources.

F003.35

Page 4-173 states, "The use of chem/bio simulants would have negligible impacts on Potomac River birds. Based upon previous events and modeling presented in Sections 4.4.1.2 and 4.11.1.4, simulant concentrations that Potomac River birds would be exposed to are predicted to be well below levels that would cause toxicity to them. The use of BSL-1 biological simulants would have no effects on birds, as some of these organisms are already naturally present in the area." The basis of this determination is not clear and needs more information. The Navy's effort to coordinate with the U.S. Fish and Wildlife Service (FWS) is recognized with its letter included in Appendix F. Although, FWS had not yet responded, their input and/or concurrence is important.

F003.36

F003.37

Page 4-177 states that "Semi-aquatic mammals, such as the river otter, muskrat, and mink, may spend much of their time on or near the Potomac River in search of prey. Would bullets impact the habitat of these animals and would they be at risk?"

F003.38

### Environmental Justice

The methodology used to identify areas of potential Environmental Justice (EJ) concern is a matter of serious concern. The methodology used creates a major underestimation of areas of potential EJ concern. The errors in understand and application of the simple mathematics used in development benchmarks grossly misrepresents the manner in which the methodology and its mathematics are applied. The error is one that created additional burdens for any areas of EJ concern that may exist within the study area to an extent that may lead to a failure to identify all of the communities of EJ concern. The application of the mathematics in this inappropriate way may disenfranchise those seeking fair and appropriate treatment. To begin with, there seems to be some confusion as to the nature of the use of the state or county minority or low income population plus 20 percent. This is a very routine mathematical calculation that is used for any number of purposes. This calculation means that the percent minority population value as given in the document of 45.1% or Maryland is multiplied by 1.2 (that is the value plus 20 percent of the value which is 54.12 %). The benchmark value should have been 54.12%, based upon the correct application of the 20 percent value. The benchmark value is not calculated as 45.1 % plus 20 additional percent as was incorrectly done to arrive at a value of 65.1%. The benchmarks provided in this document are incorrectly calculated. There is a significant difference in the two benchmarking values 54.12% (the value plus 20 percent of the value) as opposed to 65.1% (the value plus an additional 20 percentage points added). When looking at the low income numbers, the same serious mistake is made. A low income percentage of 8.6 % is indicated to be the percent of residents in Maryland that are identified as low income residents. The benchmark calculated in this document is 28.6 percent, as opposed to what it should have been (8.6 times 1.2 which equals 10.32%). To demonstrate the gross error in the benchmark calculations, if we look at the percent increase in values from 8.6 percent to 28.6 percent, we are looking at an increase of 332.558 percent in the values. That is, the benchmark calculated is more than three times higher than the percent of low income population for the state. This does not appear to be an

F003.39

F003.40



appropriate application of the mathematics. This created an unfair and unreasonable burden upon the population that is unacceptable at any level.

The identification of at risk populations is so flawed that it makes any assessment inaccurate and invalid that has been done. This assessment needs to be redone with appropriate calculations, and the rethinking of much of the methodology.

F003.41

- a. The correct application of the percent minority or low income population percentage plus 20% of the value should be used throughout this document.
- b. All benchmarks should be recalculated.
- c. County percentages should be used for comparison to percentages of minority and low income populations in the respective states as values for comparison.
- d. Census tracts within the study area should be identified, and the demographics of those census tracts used in the analyses.
- e. In addition to the statistics for each minority population that were presented separately, it may also be helpful to add a column combining the entire minority populations found in a given census tract.
- f. It would be helpful to have tables with data at the census tract or block group level for the study areas that show percentages of minority and low income populations along with the state and county averages, all minority percentages combined, low income population percentages and the state and county averages, appropriate data for children, the elderly, or any other appropriate demographic for the study.

F003.42

F003.43

F003.44

F003.45

F003.46

The calculations used to benchmark children in the study area uses the same incorrect and unacceptable mathematics. The error for the children's benchmark was the value plus an additional 10 percentage points. Why? Why not 20? Why not 30? Why not 5? Please provide the rationale. The use of the methodology is incorrect and seems arbitrary.

F003.47

It cannot be determined if other aspects of the assessment are valid since the assessment methodology used to identify areas of potential Environmental Justice concern is flawed.

F003.48

Environmental Justice is something that needs to be assessed at the local level. The assessment requires you to know what is going on at the community level. Using county level data does not assist in identifying communities of concern. The communities in question will be too small to be identified through county level assessment. The assessments need to be done at the census tract, or preferably at the block group level.

F003.49

### Protection of Children from Environmental Health Risks

Page 4-25 states, "The RDT&E activities conducted by NSWCD would not disproportionately affect children, as activities would not have a greater effect on children than adults." This statement seems to disagree with the breath and scope of Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. As stated in Section 1 of the EO, "A growing body of scientific knowledge demonstrates that children may suffer

F003.50



disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults, children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves." Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:

- (a) Shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and
- (b) Shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

The DEIS states on page 4-25 that tract 8758.01 in St. Mary's County, Maryland is identified as having an unusual concentration of children. However, "no high or disproportionate adverse impacts would be borne by children as a result of the current RDT&E activities at NSWCDD." It is not clear how the Navy has come to this conclusion. Have studies been done to assess impacts to children? Has the population on tract 8758.01 been assessed to determine activities impact or is there a plan to monitor effects on this specific tract or others for trend setting information?

F003.51

### Health Impact Assessment

Considering the significant increase in activity proposed, the unknown threshold of exposure which may negatively impact human health, the wide span of potential impact and the cumulative impacts from other activities in the area, EPA suggests that this action warrants consideration of a Health Impact Assessment (HIA). An "HIA is a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. Health impact assessment provides recommendations on monitoring and managing those effects." (*Adapted from the International Association for Impact Assessment's definition of health impact assessment.*)

F003.52

For more information, contact the Board on Environmental Studies and Toxicology at (202) 334-3812 or visit <http://dels.nas.edu/best>.

### Cumulative Impacts

Section 5, Cumulative Impacts and NEPA Considerations, presents a brief description of projects (past and present) in the area which may have the potential to influence the resources affected by the Proposed Action. It would have been helpful to have had the referenced projects depicted on a map to better appreciate where they are located in proximity to NSWCDD.

F003.53



Section 5.2.5, The Summary of Cumulative Impacts Relative to the Proposed Action, presents a discussion of cumulative impacts to resources. Considering that other agencies/activities are ongoing and contributing to the incremental increase in impact to resources, is there a coordination effort among organizations to monitor resource impacts, especially with the DOD agencies?

] F003.54

Miscellaneous

Page 3-270, the "Buffering capacity" definition in the blue box is not complete; it is missing text.

] F003.55







IN REPLY REFER TO:

# United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
Custom House, Room 244  
200 Chestnut Street  
Philadelphia, Pennsylvania 19106-2904



October 1, 2012

9043.1  
ER 12/590

Commander  
Naval Surface Warfare Center Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5130  
Attn: Code C6 (NSWCDD PAO)

Subject: Draft Environmental Impact Statement (DEIS), for the Outdoor Research,  
Development, Test and Evaluation Activities Potomac River Test Range, Naval  
Facilities Dahlgren, VA

Dear Commander:

The U.S. Department of the Interior, Office of Environmental Policy and Compliance, has reviewed the subject draft environmental impact statement and offers the following comments.

## COMMENTS

### Chapter 2 and Chapter 4

General: These sections do not contain sufficient information about how the ordinance, chemical, and biological materials will be recovered after they are discharged, nor do they contain sufficient information on the chemical composition of the ordinance to allow an assessment of environmental residence times. This information is needed to assess the potential to affect fish and wildlife populations.

F004.1

F004.2

We suggest that the chemical content of the ordinance be identified along with its effect on water and sediment composition (similar to the discussion in section 4-8 on human toxicity). The DEIS should describe how long the ordinance will remain in the environment, the potential for ingestion by wildlife or fish, and the cumulative impact of the material on land, wetlands, and in water, resulting from that potential. This analysis should also contain estimates of the effects of higher frequency of exposure as proposed in the DEIS.

F004.3

F004.4

### 2.5.4.2 Likely Progression of Chem/Bio RDT&E

In any environmental risk assessment the toxicity of a chemical compound is dependent on the concentration (dose). We suggest that the DEIS provide information on the expected



concentrations of chemical and biological simulants in air and water along with the toxicity to exposed organisms, the duration of exposure, and the potential cumulative effects of the higher frequency exposures proposed. Without the concentration information, it is not possible to assess the biologic impact and to support the finding of Negligible Effects.

Thank you for the opportunity to review and comment on the DEIS. If you have any questions concerning our comments, please contact Gary Patterson, Acting USGS Coordinator for Environmental Document Reviews, at (303) 236-1476 or at [glpatter@usgs.gov](mailto:glpatter@usgs.gov)

Sincerely,

A handwritten signature in black ink, appearing to read 'Lindy Nelson', with a stylized flourish at the end.

Lindy Nelson  
Regional Environmental Officer

cc: Gary Patterson, USGS  
FWS, VA

-----Original Message-----

From: Brown, Kristine L CIV (US) [<mailto:kristine.l.brown.civ@mail.mil>]

Sent: Thursday, October 04, 2012 11:58 AM

To: dlgr\_nswc\_eis

Cc: Banks, Terry L CIV (US)

Subject: Draft EIS Comments (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Good afternoon. Attached are comments from Fort A.P. Hill regarding the Draft Environmental Impact Statement for Outdoor Research, Development, Test and Evaluation Activities.

My apologies for being a couple of days late. If you have any questions regarding our comments, please feel free to contact me at: 804-633-8417

V/R,

Kristine

Kristine L. Brown CMNRP, AWB

NEPA Planner - Fort A.P. Hill

Department of the Army

19952 N. Range Rd, Fort A.P. Hill, VA 22427

Comm: (804) 633-8417 DSN: 578-8417

Fax: (804) 633-8443

<https://www.facebook.com/FortAPHillEnvironmentalDivision>

Classification: UNCLASSIFIED

Caveats: NONE



NEPA Comment  
Form.xls

Draft Dahlgren EIS Review Comments					
Comment Number	Page Number	Section/Figure/Table/Appendix	Line Number	Commentor	Comment
1	5-10	5.1.4		Jason Applegate	This information is no longer current. A re-inventory of Natural Heritage resources was completed after the FEIS was published. Contact FAPH Natural Resources for updated information.
2	5-21	5.2.1		Jason Applegate	(1) FAPH's ACUB goal is to permanently preserve approximately 35,000 acres of open space around the installation. However, the acreages cited in the draft EIS per priority zone are no longer current. Only cite the 35,000 +/- acreage. (2) FAPH ACUB has contributed towards the permanent preservation of approximately 10,000 acres since 2006. All ACUB projects undergo NEPA Analysis.
3	5-23	5.2.2		Jason Applegate	The NOVA Regional Conservation Forum has not met for some time. Unsure if this is an active initiative.
4	3-91	fig 3.5-5 and -6		Sergio Sergi	General comment on section: Noticed that noise models results of PK50 Peak levels reach 115 dbp or higher near the northern boundary of Fort AP Hill. Was PK15 also modeled? If it wasn't why. Our concern is that our northern boundary neighbors could report noise complaints to Fort AP Hill associated with Dahlgren activities. We understand that these events associated with the 8"/55 guns are very infrequent but it would be very beneficial to Fort AP Hill staff to be notified prior to testing.
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**STATE AGENCY  
COMMENTS**

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## Maryland Transportation Authority

Martin O'Malley  
Governor

Anthony Brown  
Lt. Governor

Darrell B. Mobley  
Acting Chairman

Peter J. Basso  
Rev. Dr. William C. Calhoun, Sr.  
Mary Beyer Halsey  
Arthur Hock  
A. Bradley Mims  
Michael J. Whitson  
Walter E. Woodford, Jr., P.E.

Harold M. Bartlett  
Executive Secretary

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711 (MD Relay)  
1-866-713-1596

e-mail: [mdta@mdta.maryland.gov](mailto:mdta@mdta.maryland.gov)

[www.mdta.maryland.gov](http://www.mdta.maryland.gov)



August 28, 2012

Naval Surface Warfare Center  
Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, Virginia 22448-5117

Dear Commander M. H. Smith:

Thank you for the opportunity to review the Naval Surface Warfare Center, Dahlgren Division's Outdoor Research, Development, Test, and Evaluation Activities Draft Environment Impact Statement (DEIS). We have reviewed the DEIS and have no comments at this time.

5001.1

Should you have any questions or need any additional information regarding the Governor Harry W. Nice Memorial Bridge Improvement Project, please do not hesitate to contact me at 410-537-5665 or via email at [gsmith2@mdta.state.md.us](mailto:gsmith2@mdta.state.md.us). You may also visit the project's webpage for updates at [www.mdta.maryland.gov](http://www.mdta.maryland.gov).

Sincerely,

Glen A. Smith  
Project Manager



**MDP**  
*Maryland Department of Planning*

*Martin O'Malley*  
Governor  
*Anthony G. Brown*  
Lt. Governor

*Richard Eberhart Hall*  
Secretary  
*Matthew J. Power*  
Deputy Secretary

September 6, 2012

M. H. Smith  
Naval Surface Warfare Center Dahlgren Division  
Department of the Navy  
6149 Welsh Road, Suite 203  
Attn: Code C6  
Dahlgren, VA 22448-5117

**STATE CLEARINGHOUSE REVIEW PROCESS**

State Application Identifier: MD20120828-0630

Reviewer Comments Due By: September 18, 2012

Project Description: Draft Environmental Impact Statement (EIS): Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development, Test, and Evaluation Activities

Project Location: State(s) of Maryland and Virginia; and the District of Columbia  
Clearinghouse Contact: Sophia Richardson

Dear Smith:

Thank you for submitting your project for intergovernmental review. Participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps ensure project consistency with plans, programs, and objectives of State agencies and local governments. MIRC enhances opportunities for approval and/or funding and minimizes delays by resolving issues before project implementation.

The following agencies and/or jurisdictions have been forwarded a copy of your project for their review: the Maryland Department(s) of Natural Resources, the Environment, Transportation; the County(ies) of St. Mary's, Charles; including Maryland Historical Trust. They have been requested to contact your agency directly by **September 18, 2012** with any comments or concerns and to provide a copy of those comments to the State Clearinghouse for Intergovernmental Assistance. Please be assured that after **September 18, 2012** all MIRC requirements will have been met in accordance with Code of Maryland Regulations (COMAR 34.02.01.04-.06). The project has been assigned a unique State Application Identifier that should be used on all documents and correspondence.

5002.1

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at [srichardson@mdp.state.md.us](mailto:srichardson@mdp.state.md.us). Thank you for your cooperation with the MIRC process.

Sincerely,

*Linda C. Janey*  
Linda C. Janey, J.D., Assistant Secretary

**P.S. Great News!!** Your project may be eligible to be "FastTracked" through the State permitting processes. For more information, go to: <http://easy.maryland.gov/wordpress/fasttrack/>.

LC:SR

Enclosure(s)

cc: Greg Golden - DNR  
Melinda Gretsinger - MDOT

Steven Ball - CHAS  
Beth Cole - MHI

Phil Shire - STMA  
Amanda Degen - MDE

12-0630\_NDC\_NEW.doc

301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305

Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay

Internet: [Planning.Maryland.gov](http://Planning.Maryland.gov)





Good morning Mr. Smith:

I am providing you with all of the comments received by the Clearinghouse for **MD20120828-0630 - Draft Environmental Impact Statement (EIS): Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development, Test, and Evaluation Activities**. This concludes the review of this project.

Thanks Sophia

### 1. Maryland Department of Planning:

C1 - It is Consistent with our plans, programs, and objectives

] S005.1

C2 - It is **Consistent** with the policies contained in **Executive Order 01.01.1992.27** (Maryland Economic Growth, Resource Protection, and Planning Act of 1992), **Executive Order 01.01.1998.04** (Smart Growth and Neighborhood Conservation Policy), and our plans, programs, and objectives.

] S005.2

C7 - It is consistent with the requirements of State Finance and Procurement Article 5-7B-02; 03; 04 and 05 Smart Growth and Neighborhood Conservation (Priority Funding Areas).

] S005.3

### 2. Maryland Department of Natural Resources:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

] S004.1

### 3. Maryland Department of the Environment:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

] S003.1

### 4. Charles County:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

### 5. Maryland Department of Transportation:

R1 - As far as can be determined at this time, the subject has no unacceptable impacts on the

] S006.1

Martin O'Malley, Governor  
Anthony G. Brown, Lt. Governor

Richard Eberhart Hall, AICP, Secretary  
Matthew J. Power, Deputy Secretary

plans or programs of the Department of Transportation.

] S006.1

**6. Maryland Historical Trust:**

C3 - No adverse effect on historic properties

] S007.1

**7. St. Mary's County:**

C1 – Note lack of noise Monitoring Locations for the upper LDZ bordering St. Mary's "County



## MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore, Maryland 21230

410-537-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Martin O'Malley  
Governor

Robert M. Summers, Ph.D.  
Secretary

Anthony G. Brown  
Lieutenant Governor

September 18, 2012

M. H. Smith  
Naval Surface Warfare Center Dahlgren Division  
Department of the Navy  
6149 Welsh Road, Suite 203  
Attn: Code C6  
Dahlgren, VA 22448-5117

RE: State Application Identifier: MD20120828-0630  
Project: Draft Environmental Impact Statement (EIS): Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development, Test, and Evaluation Activities

Dear M. H. Smith:

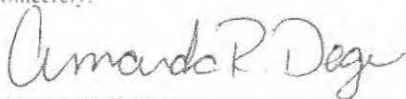
Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review, and the following comments are offered for your consideration.

1. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information. ] S003.2
2. If the proposed project involves demolition, Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information. ] S003.3
3. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities. ] S003.4
4. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations. ] S003.5
5. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437. ] S003.6

M. H. Smith  
September 18, 2012  
Page Two

Again, thank you for giving MDE the opportunity to review this project. If you have any questions or need additional information, please feel free to call me at (410) 537-4120.

Sincerely,

A handwritten signature in cursive script that reads "Amanda R. Degen". The ink is dark and the signature is fluid.

Amanda R. Degen  
MDE Acting Clearinghouse Coordinator  
Office of Communications

cc: Sophia Richardson, State Clearinghouse



**Comments on MD20120828-0630 - the Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development and Test and Evaluation Activities, Draft Environmental Impact Statement.**

In response to your request dated 14 August 2012, following are Maryland DNR's comments concerning the Draft Environmental Impact Statement concerning the Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development and Test and Evaluation Activities. Three alternatives are analyzed in this EIS: the No Action Alternative, which addresses historical and current mission activities; Alternative 1 which addresses baseline activity levels plus known future requirements; and Alternative 2, which addresses current baseline requirements, known future requirements, and projected increases in the foreseeable future based on current trends.

**Consistent with Maryland's previous communication with the U.S. Navy regarding training and testing activities in coastal areas, Maryland recommends the No Action Alternative to minimize coastal resource impacts and coastal use conflicts. The No Action Alternative keeps training and testing at the same level as contained in existing Master Plans.**

S004.2

Consistency with the Coastal Zone Management Act

Appendix H contains two Consistency Determinations (CDs), one for Virginia's Coastal Program and one from Maryland's Coastal Program. Regarding the CD intended for Maryland, please note that Navigational comments focus on the noise policy. In addition to this issue, a Charles County commenter noted a potential use conflict with a marina and development project on the Maryland side of the Potomac River. The proposed increased training and testing activities may conflict with other activities in the Potomac River, such as recreational and commercial fishing, recreational boating and War of 1812 related events. Please consider both the above comments and the General Comments below in assessing the consistency of proposed activities with Maryland's enforceable policies.

S004.3

S004.4

S004.5

General Comments

For the above referenced facility, (Potomac River Watershed), we have the following information on key natural resources:

1. DNR no longer tracks Bald Eagle nests therefore the applicant should refer to the National Bald Eagle Management Guidelines, which can be found online at <http://www.fws.gov/northeast/EcologicalServices/eagle/guidelines/index.html>. We also recommend that you consult with the U.S. Fish and Wildlife Service concerning this issue
2. The facility is a near a waterfowl concentration and staging area. If there is to be any construction of water-dependent facilities or an increase in the noise levels from the Center, please contact Larry Hindman of the Wildlife and Heritage Service (WHS) Service at (410) 221-8838 ext. 105 for further technical assistance regarding waterfowl. In addition, it may be beneficial to initiate a group of people who are impacted by the proposed increased level of noise to recommend workable solutions to this potential problem.
3. Beaches on the site provide likely terrapin and horseshoe crab spawning habitat and therefore permanent and seasonal disturbance to the beach should be minimized. MD DNR Fisheries Service can be contacted for specific guidelines.
4. This area of the Potomac River is downstream of pristine largemouth bass (LMB) habitat and if shoreline erosions control projects are warranted, we

S004.6

S004.7

S004.8

S004.9

S004.10

- requested that Joe Love (MD DNR Fisheries Service, black bass biologist) be contacted at 410-260-8257. S004.10
5. Submerged aquatic vegetation (SAV) is also adjacent to the site, although it appears to be limited in distribution, it is important in erosion control, water quality benefits, and fish habitat. Therefore, impacts to SAV should be avoided, and if impacts are proposed in the vicinity of SAV beds, impacts should be minimized. S004.11
6. Increased exclusion of commercial and recreational boaters due to increased naval warfare activities as stated in your DEIS may significantly impact the livelihood of some commercial fishermen, therefore we recommend contact the Potomac River Fish Commission, obtaining a list of licensed fishermen and soliciting comments directly from this group to more accurately assess this impact. Recommend a web-based and text message system with river and creek restrictions updated daily, allowing recreational and commercial boaters access to the latest up-to-date information. S004.12
7. Natural oyster bars are also near the property, any potential impacts should be minimized but the Department will provide specific recommendations upon request. S004.13
8. According to our inundation maps, this site is highly susceptible to sea level rise and therefore we would recommend a proactive plan to address sea level rise using the framework outlined on the State's vulnerability to sea level rise webpage: [http://www.dnr.state.md.us/bay/czm/sea\\_level\\_rise.html](http://www.dnr.state.md.us/bay/czm/sea_level_rise.html) S004.14
9. The Potomac River in this vicinity is very important striped bass and anadromous fish species spawning sites. Fish species in this area may also include Atlantic sturgeon, a potentially federally protected species, as such; disturbance to in-river habitat should be both seasonal and minimized. Generally, no instream work likely to result in suspended sediments within the water column is allowed in this area of the Potomac River between 15 February and 15 June, inclusive, of any year. S004.15
10. The USCG should be consulted concerning Potomac River mainstem boating modifications. S004.16
11. Recommend continued fish and shellfish tissue analysis to determine if the increases in the Center's activities will be detrimental to the fish in the area. This should consider different life stages especially the older fish in the system. S004.17
12. Investigate point and non-point source pollution areas and rectify these areas. S004.18
13. Determine (model) the potential effects to wildlife due to magnetic and electric field exposure. S004.19

Concerning the above general comments, please contact:

Robert Sadzinski,  
Environmental Review Unit  
Maryland Department of Natural Resources  
Tawes State Office Building, D-2  
Annapolis, MD 21401  
410-260-8312



**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

203 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-1712

**MEMORANDUM**

DATE: September 21, 2012  
TO: Dept of Navy  
FROM: Roberta Rhur, Environmental Impact Review Coordinator  
SUBJECT: DCR 12-057, Outdoor Research and Testing Activities, Naval Surface Warfare Center Dahlgren

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Little Ferry, Gambo Creek, Gambo Creek South and Tetotum Flats Conservation Sites are located within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Little Ferry, Gambo Creek, Gambo Creek South and Tetotum Flats Conservation Sites have all been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at these sites is:

*Haliaeetus leucocephalus*

Bald eagle

G5/S2S3B,S3N/NL/LT

The Bald eagle breeds from Alaska eastward through Canada and the Great Lakes region, along coastal areas off the Pacific and Atlantic Oceans, and the Gulf of Mexico, and in pockets throughout the western United States (NatureServe, 2009). In Virginia, it primarily breeds along the large Atlantic slope rivers (James, Rappahannock, Potomac, etc) with a few records at inland sites near large reservoirs (Byrd, 1991). Bald eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald eagles feed on fish, waterfowl, seabirds (Campbell et. al., 1990), various mammals and carrion (Terres, 1980). Please note that this species is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).



Threats to this species include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply and illegal shooting (Herkert, 1992).

Due to the legal status of the Bald eagle, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

S008.1

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

S008.2

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

S008.3

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

S008.4

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or [Gladys.Cason@dgif.virginia.gov](mailto:Gladys.Cason@dgif.virginia.gov)).

#### Division of Stormwater Management

A review of the project indicates that there is no construction proposed; therefore, this division has no comment.

S008.5

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

S008.6

Cc: Amy Ewing, VDGIF



#### Literature Cited

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- Campbell, R.W., N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G.W. Kaiser, and M.C.E. McNall. 1990. *The Birds of British Columbia. Vol. 1. Nonpasserines: Introduction and loons through waterfowl*. Royal British Columbia Museum, Victoria, British Columbia, Canada.
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## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF ENVIRONMENTAL QUALITY

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Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

October 18, 2012

Commander, Attn: Code C-6  
Naval Surface Warfare Center, Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, Virginia 22448

RE: Draft Environmental Impact Statement and Federal Consistency Determination,  
Outdoor Research, Development, Test, and Evaluation Activities at Naval  
Surface Warfare Center, Dahlgren (DEQ-12-152F)

Dear Sir or Madam:

The Commonwealth of Virginia has completed its review of the above-referenced Draft Environmental Impact Statement, which includes a Federal Consistency Determination as Appendix H. The Department of Environmental Quality is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act, and Federal Consistency Determinations prepared pursuant to the Coastal Zone Management Act. The following state agencies joined in this review:

Department of Environmental Quality  
Department of Game and Inland Fisheries  
Department of Conservation and Recreation  
Department of Health  
Department of Historic Resources.

In addition, the following agencies, planning district commission, and locality were invited to comment:

Department of Agriculture and Consumer Services  
Marine Resources Commission  
Virginia Institute of Marine Science  
Department of Aviation  
George Washington Regional Commission  
King George County.

## DESCRIPTION OF PROPOSED ACTIONS

The Navy proposes to expand research, development, test, and evaluation activities within the Potomac River Test Range and Explosives Experimental Area complexes, the Mission Area, and special use airspace at the Naval Support Facility, Dahlgren in King George County. These activities include outdoor operations requiring the use of ordnance (guns and explosives), electromagnetic energy, lasers, and chemical and biological simulates (non-toxic substances used to mimic dangerous agents). The purpose of the proposed action is to enable the Naval Surface Warfare Center, Dahlgren Division to meet current and future mission-related warfare and force protection requirements by providing research, development, testing, and evaluation of surface ship combat systems, ordnance, lasers and directed energy systems, force level warfare, and homeland and force protection. The Draft Environmental Impact Statement (Draft EIS) analyzes three alternatives:

- No-Action Alternative, addressing historical and current mission activities (Draft EIS, pages 2-5 through 2-9, sections 2.4 through 2.4.5);
- Alternative 1, addressing baseline activity levels plus known future requirements (Draft EIS, pages 2-9 through 2-22, sections 2.5. through 2.5.5); and
- Alternative 2 (Preferred Alternative), addressing current baseline requirements, known future requirements, and projected increases in the foreseeable future, based on current trends (pages 2-22 through 2-23, sections 2.6 and 2.7).

The Draft EIS includes a Federal Consistency Determination (Appendix H). The Federal Consistency Determination indicates, in broad terms, that Alternative 1 would involve approximately doubling the existing ("No-Action") activity level, and that Alternative 2 would involve an increase of 15 percent over Alternative 1 activity levels (FCD, page H-5, "Alternatives" heading). Greater specificity is available in the Draft EIS in Table 2-2, page 2-6. See also "Federal Consistency....," below.

## ENVIRONMENTAL IMPACTS AND MITIGATION

**1. Surface Water, Wastewater, and Wetlands.** According to the Navy, none of the alternatives would involve filling of, or other significant physical alterations to, wetlands on or outside the Dahlgren installation. Concentrations of residues from ordnance activities would be virtually undetectable, as explained in Appendix F of the Draft EIS (FCD, page H-10, "Wetlands Management" heading). In addition, the Navy states that the Navy-owned sewage treatment plant on the installation would continue operating as at present (FCD, pages H-10 and H-11, "Point Source Pollution Control" heading).

**1(a) Agency Jurisdiction.** The State Water Control Board (SWCB) promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System (VPDES) Permit, Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection Permit (VWPP). The VWPP is a state permit which governs wetlands, surface water, and



surface water withdrawals/impoundments. It also serves as § 401 certification of the federal *Clean Water Act* § 404 permits for dredge and fill activities in waters of the U.S. The VWPP Program is under the Office of Wetlands and Water Protection/Compliance, within the DEQ Division of Water Quality Programs. In addition to central office staff that review and issue VWP permits for transportation and water withdrawal projects, the seven DEQ regional offices perform permit application reviews and issue permits for the covered activities.

**1(b) Agency Findings.** According to DEQ's Northern Regional Office, it appears from the Draft EIS that impacts to water resources from the proposed actions will be negligible. Also, wastewater generation would not increase, and the Navy's sewage treatment plant, located at the southern end of Mainside, would continue to meet current and future wastewater requirements.

S009.1

**1(c) Requirements.** In the event impacts to surface waters are contemplated by the Navy, a Virginia Water Protection Permit may be required from DEQ's Northern Regional Office (DEQ-NRO). See "Regulatory and Coordination Needs," item 4, below.

**1(d) General Recommendations.** In general, DEQ recommends that surface water and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices:

S009.2

- Use directional drilling from upland locations for stream crossings, to the extent practicable. If directional drilling is not feasible, stockpile the material excavated from the trench for replacement.
- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable;
- Construct trenches in a manner that does not drain the wetlands (for example, backfilling with extensive gravel layers thereby creating a French drain effect).
- Preserve the top 12 inches of trench material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Design erosion and sedimentation controls in accordance with the most current edition of the *Virginia Erosion and Sediment Control Handbook*. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.



- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry in state waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.
- Flag or mark all non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading, or filling activities for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur.
- Employ measures to prevent spills of fuels or lubricants into state waters.

**1(e) Conclusions.** Provided that all necessary VWPP authorizations are obtained and complied with, DEQ-NRO concurs that this project will be consistent with the requirements of the VWPP program, and thus consistent with the Wetlands Management enforceable policy of the VCP.

S009.3

In addition, DEQ-NRO did not disagree with the Navy's determination that the proposed action would be consistent with the Point Source Pollution Control enforceable policy of the VCP (see item 1(b), above, and also FCD, pages H-10 and H-11, "Point Source Pollution Control" heading).

S009.4

**2. Subaqueous Lands Management.** According to the Navy, the proposed action would not involve any encroachment in, on, or over state-owned subaqueous lands (FCD, page H-10, "Subaqueous Lands Management" heading).

**2(a) Agency Jurisdiction.** The Virginia Marine Resources Commission (VMRC), pursuant to Section 28.2-1204 of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth. For any development that involves encroachments channelward of ordinary high water along natural rivers and streams, a permit is required from VMRC.

The VMRC serves as the clearinghouse for the Joint Permit Application used by the:

- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands;
- U.S. Army Corps of Engineers for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a Virginia Water Protection Permit; and
- Local wetlands boards for impacts to wetlands.

**2(b) Agency Comments.** VMRC did not respond to our request for comments. Questions may be directed to VMRC (Tony Watkinson, telephone 9757) 247-2200).

S009.5



**2(c) Conclusion.** The VMRC did not disagree with the Navy's determination that subaqueous lands would not be affected (item 2, above).

S009.5

**3. Erosion and Sediment Control, and Stormwater Management.** The Draft EIS discusses impacts of the preferred alternative, Alternative 2, to soils and sediments in Chapter 4 (pages 4-104 through 4-105, sections 4.93. through 4.9.5).

**3(a) Agency Jurisdiction.** The Department of Conservation and Recreation (DCR) Division of Stormwater Management (DSM) administers the *Virginia Erosion and Sediment Control Law and Regulations (VESCL&R)* and *Virginia Stormwater Management Law and Regulations (VSWML&R)*.

**3(b) Agency Comments.** DCR's review of the project indicates that there is no construction proposed; therefore, DCR's Division of Stormwater Management has no comment.

S008.5

**3(c) Requirements.** The following guidance is provided for any future projects with land-disturbing activities.

**(i) Erosion and Sediment Control and Stormwater Management Plans**

According to DCR-DSM guidance, the Navy and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in land disturbance equal to or greater than 2,500 square feet would be regulated by *VESCL&R*. Accordingly, the Navy must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DCR Regional Office that serves the area where the project is located for review for compliance. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: *VESCL* §10.1-567]

**(ii) Virginia Stormwater Management Program General Permit for Stormwater Discharges from Construction Activities**

DCR is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges



from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The operator or owner conducting land-disturbing activities equal to or greater than 2,500 square feet in areas designated as subject to the *Chesapeake Bay Preservation Area Designation and Management Regulations* is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific Stormwater Pollution Prevention Plan. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *VSMP Permit Regulations*. General information and registration forms for the General Permit are available on DCR's website at: [http://www.dcr.virginia.gov/stormwater\\_management/vsmp.shtml](http://www.dcr.virginia.gov/stormwater_management/vsmp.shtml). [Reference: Virginia Stormwater Management Act §10.1-603.1 *et seq.*; *VSMP Permit Regulations*, 4 VAC 50 *et seq.*]

**4. Solid and Hazardous Waste Management.** The Draft EIS discusses hazardous materials and hazardous waste management in Chapter 4. The preferred alternative, Alternative 2, is covered on pages 4-73 through 4-78 (sections 4.7.3 through 4.7.3.4).

**4(a) Agency Jurisdiction.** Solid and hazardous wastes in Virginia are regulated by the Virginia Department of Environmental Quality, the Virginia Waste Management Board (VWMB) and the U.S. Environmental Protection Agency. These entities administer programs created by the federal Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act), and the Virginia Waste Management Act. DEQ administers regulations established by the VWMB and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the *Solid Waste Management Planning Regulations*, to identify the strategies they will follow on the management of their solid wastes to include items such as facility siting, long-term (20-year) use, and alternative programs such as materials recycling and composting.

**4(b) Agency Findings.** The DEQ Division of Land Protection and Revitalization (DLPR) (formerly called the Waste Division) conducted a cursory review of its database files for zip codes 22448 and 22485, including a VEGIS database search (within an 0.25 mile radius of the project site), and found a number of waste facility sites. A list of these sites is included in the attachments (DEQ memo, Coe to Fisher, dated September 20, 2012) to this document. The proximity of the sites to the project site should be evaluated further.

5009.6

**4(c) Requirements.** Any soil that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations (see "Regulatory and Coordination Needs," item 1(b), below). Any contaminated media generated from the facility project site are the Navy's responsibility; the Navy must



ensure that contaminated media undergo proper management, storage, treatment, and disposal in accordance with state regulations. Questions regarding the proper management of solid and/or hazardous waste should be directed to DEQ's Northern Regional Office (see "Regulatory and Coordination Needs," item 1(a), below).

**4(d) Recommendations.** DEQ encourages the Navy to implement pollution prevention principles in any construction projects. These principles include reduction of wastes at the source, re-use of materials, and recycling of all solid wastes generated. Hazardous waste generation should be minimized, and hazardous wastes handled in accordance with regulatory requirements.

S009.7

## **5. Natural Heritage Resources.**

### **5(a) Agency Jurisdiction.**

#### **(i) Department of Conservation and Recreation**

The mission of the Virginia Department of Conservation and Recreation is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the Division of Natural Heritage. The Natural Heritage Program's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The Virginia Natural Area Preserves Act, Virginia Code sections 10.1-209 through 10.1-217, codifies DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened, and endangered species, significant natural communities, geologic sites, and other natural features).

#### **(ii) Department of Agriculture and Consumer Services**

The Endangered Plant and Insect Species Act, Virginia Code Chapter 39, sections 3.1-102 through 3.1-1030, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperate with the U.S. Fish and Wildlife Service, DCR-DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by the U.S. Fish and Wildlife Service, are available, adherence to the order and tasks outlines in the plans are followed to the extent possible.

**5(b) Agency Comments.** VDACS did not respond to DEQ's request for comments on this project. Questions on plant and insect species may be directed to VDACS (Keith Tignor, telephone (804) 786-3515). DCR comments follow.

S009.8



**(i) Natural Heritage Resources; Definition.**

DCR-DNH has searched its Biotics Data System for occurrences of natural heritage resources in the project area. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations. DCR-DNH indicates that four conservation sites are located within the project area; the natural heritage resource of concern in these conservation sites is the bald eagle. See item 5(c), below.

**(ii) Threatened and Endangered Plant and Insect Species.**

VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act (item 5(a)(ii), above). Under a Memorandum of Agreement established between VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species. DCR finds that the proposed actions will not affect any documented state-listed plants or insects. Additional responsibilities of VDACS are indicated in item 10(a), below.

**(iii) State Natural Area Preserves.**

DCR indicates that there are no State Natural Area Preserves in the project vicinity.

**5(c) Conservation Sites and the Bald Eagle.**

**(i) Conservation Sites.**

DCR indicates that the Little Ferry, Gambo Creek, Gambo Creek South, and Tetotum Flats Conservation Sites are located within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Little Ferry, Gambo Creek, Gambo Creek South and Tetotum Flats Conservation Sites have all been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at these sites is:

*Haliaeetus leucocephalus*

Bald eagle

G5/S2S3B,S3N/NL/LT

**(ii) Bald Eagle.**

The bald eagle breeds from Alaska eastward through Canada and the Great Lakes region, along coastal areas along the Pacific and Atlantic Oceans and the Gulf of Mexico, and in pockets throughout the western United States (NatureServe, 2009). In



Virginia, the bald eagle breeds primarily along the large Atlantic slope rivers (James, Rappahannock, Potomac, *etc.*) with a few records at inland sites near large reservoirs (Byrd, 1991). Bald eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald eagles feed on fish, waterfowl, seabirds (Campbell *et al*, 1990), various mammals and carrion (Terres, 1980). This species is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (DGIF).

Threats to the bald eagle include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply, and illegal shooting (Herkert, 1992).

**5(d) Recommendation.** Due to the legal status of the Bald eagle, DCR recommends coordination with DGIF, Virginia's regulatory authority for the management and protection of this species, to ensure compliance with the Virginia Endangered Species Act (Virginia Code sections 29.1-563 through 29.1-570).

] S008.1

**5(e) Additional Information.** New and updated information is continually added to Biotics. Please contact DCR (Rene' Hypes, telephone (804) 371-2708) for an update on this natural heritage information if a significant amount of time passes before it is utilized.

] S008.4

**6. Wildlife Resources.** According to the Navy, the proposed actions are not expected to have significant adverse impacts on the conservation and enhancement of finfish or shellfish resources, or the promotion of commercial and recreational fisheries (FCD, page H-6, "Fisheries Management" heading).

**6(a) Agency Jurisdiction.** The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). The DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.Code, sections 661 *et seq.*), and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts.

**6(b) Agency Comments and Recommendations.**

**(i) Bald Eagle**

According to DGIF and as reflected in the Draft EIS (see, for example, pages 4-161 through 4-173, sections 4.12 through 4.12.3.5, including the map on page 4-163), a number of state-listed threatened bald eagle nests are known from Dahlgren. In addition, the shoreline of the Potomac River upstream of Dahlgren has been designated



a bald eagle concentration zone. Accordingly, DGIF recommends that the Navy coordinate with the Department and also with the U.S. Fish and Wildlife Service regarding any activities resulting in bald eagle habitat alterations within 660 feet of any active bald eagle nest, or within the designated concentration zone along the Potomac River. See "Regulatory and Coordination Needs," item 2(a), below.

S010.1

Although increased activities generating more frequent loud noise may temporarily affect nesting, roosting, or foraging eagles, those occupying Dahlgren territory are likely to be habituated to loud noise. DGIF recommends adherence to the currently approved Integrated Natural Resources Management Plan (INRMP) for Dahlgren, including adherence to protective measures for bald eagles and their habitats.

S010.2

S010.3

**(ii) Anadromous Fish Use Areas.**

The Potomac River, Upper Machodoc Creek, Gambo Creek, and Williams Creek have been designated Anadromous Fish Use Areas. Accordingly, DGIF recommends that any construction, restoration, or relocation activities within these waters be coordinated with the Department and with NOAA Fisheries (see "Regulatory and Coordination Needs," item 2(a), below).

S010.4

As with bald eagle protection (item 6(b)(i), above), DGIF recommends adherence to the currently approved Integrated Natural Resources Management Plan (INRMP) for Dahlgren, including adherence to protective measures for anadromous fish and their habitats.

S010.5

**6(c) Additional Information.** The Virginia Department of Game and Inland Fisheries (DGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. The DGIF database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or [Gladys.Cason@dgif.virginia.gov](mailto:Gladys.Cason@dgif.virginia.gov)).

**6(d) Conclusion.** DGIF indicates that the proposed activities are consistent with the Fisheries Management enforceable policy of the VCP, provided the Navy adheres to all necessary Best Management Practices.

S010.6

**7. Air Pollution Control.** The Draft EIS addresses air quality impacts of Alternative 2, the preferred alternative, in Chapter 4 (page 4-42, section 4.4.3). These include the potential impact on air quality of proposed chemical defense activities, for which a chemical stimulant dispersion modeling analysis was conducted. The FCD refers to this analysis, and indicates that no significant adverse impacts on air quality would result from proposed chemical defense activities; personnel working near the release point, on land or water ranges, would be equipped with respirators and protective clothing, but outside of this vicinity, there would be no exposure to elevated stimulant concentrations (FCD, page H-11, "Air Pollution Control" heading).

**7(a) Agency Jurisdiction.** DEQ's Division of Air Program Coordination, on behalf of the State Air Pollution Control Board, develops regulations implementing Virginia's Air Pollution Control Law. DEQ is charged to carry out mandates of the state law and related regulations as well as Virginia's obligations under the federal Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The Division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. DEQ's regional offices are directly responsible for issuing permits to construct and operate all stationary sources in their regions as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

**7(b) Agency Findings.** According to the DEQ Air Division, the project site is in an ozone (O<sub>3</sub>) attainment area.

**7(c) Requirements.**

**(i) Fugitive Dust**

During any construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 through 9 VAC 5-50-120 of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

**(ii) Open Burning**

Any open burning must meet the requirements of the *Regulations* (9 VAC 5-130 *et seq.*). The *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Navy should contact King George County officials to determine what local requirements, if any, exist.

S009.9



### **(iii) Fuel-burning Equipment**

In the event new or modified fuel-burning equipment is to be constructed or operated, the project may be subject to 9 VAC 5-80, Article 6 of the *Regulations*, "Permits for New and Modified Sources." This requirement applies to boilers, generators, compressors, or any other air pollution emitting equipment. See "Regulatory and Coordination Needs," item 3(b).

**8. Historic Structures and Archaeological Resources.** The Draft EIS addresses impacts of the alternatives on archaeological resources (pages 4-54 through 4.57, sections 4.6.1 through 4.6.1.3); it addresses impacts on historic structures as well (pages 4-57 through 4.69, sections 4.6.2 through 4.6.2.6). The Draft EIS indicates that the proposed alternative, Alternative 2, might give rise to impacts upon old buildings. However, in accordance with section 106 of the National Historic Preservation Act, ordnance noise and vibration modeling indicates no adverse effect to either the Dahlgren Residential Historic District or the three proposed districts on Naval Support Facility Dahlgren (the Dahlgren installation) (Draft EIS, page ES-28, Table ES-2, "Summary of Environmental Impacts").

**8(a) Agency Jurisdiction.** The Department of Historic Resources conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office (SHPO), ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation at 36 CFR Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding.

**8(b) Agency Comments.** DHR indicates that the Navy has already consulted on this undertaking, pursuant to section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. DHR believes that the undertaking will have no adverse effect upon historic properties listed in or eligible for the National Register of Historic Places and the Virginia Landmarks Register.

S011-1

### **9. Public Water Supply.**

**9(a) Agency Jurisdiction.** The Virginia Department of Health (VDH), Office of Drinking Water (ODW), reviews projects for the potential to impact public drinking water sources (groundwater wells and surface water intakes).

**9(b) Agency Findings.** According to VDH-ODW, the project is not likely to affect drinking water resources.

S012-1

**10. Farmland Preservation.** According to the Draft EIS, the implementation of Alternative 1 or Alternative 2, with their increased levels of activity over existing



conditions, (including increased use of installation land and resulting noise, and increased access restrictions), would give rise to direct, short-term impacts on such activities as travel and recreation on and near the installation (page 4-10, sections 4.1.3 through 4.1.3.2). The Draft EIS does not appear to address farmland loss or preservation

**10(a) Agency Jurisdiction.** The 2001 Virginia General Assembly established the Office of Farmland Preservation within the Virginia Department of Agriculture and Consumer Services (VDACS) to help reduce the loss of agricultural land. Additional responsibilities of VDACS are indicated in item 5(b)(ii), above.

**10(b) Agency Comments.** The Department of Agriculture and Consumer Services did not respond to our request for comments. Questions may be directed to VDACS (Keith Tignor, telephone (804) 786-3515).

S009.8

## 11. Aviation Concerns.

**11(a) Agency Jurisdiction.** The Virginia Department of Aviation's (DoAv) Airport Services Division provides airport sponsors and managers with technical assistance on a wide range of projects and issues, including the planning, design, construction and maintenance of airport facilities. The division manages funding programs for capital improvements, facilities and equipment, airport maintenance projects, and airport security; the General Aviation Voluntary Security Certification Program; the licensing program for public-use airports; and the registration program for private-use airports. This division conducts statewide aviation system planning and maintains the Virginia Air Transportation System Plan.

**11(b) Agency Comments.** The Department of Aviation did not respond to our request for comments. Questions may be directed to DoAv (Scott Denny, telephone (804) 236-3632).

S009.10

## 12. Regional and Local Concerns.

**12(a) Jurisdiction.** In accordance with Virginia Code section 15.2-4207, planning district commissions encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance. The cooperation resulting from this is intended to facilitate the recognition and analysis of regional opportunities and take account of regional influences in planning and implementing public policies and services. Planning district commissions promote the orderly and efficient development of the physical, social and economic elements of the districts by planning, and encouraging and assisting localities to plan, for the future.

**12(b) Regional Comments.** The George Washington Regional Commission did not respond to our request for comments. Questions may be directed to the Commission (Eldon James, telephone (540) 373-2890).

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**12(c) Local Comments.** King George County did not respond to our request for comments. Questions may be directed to the County (Travis Quesenberry, telephone (540) 775-9181).

S009.12

## **FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT**

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal actions that can have reasonably foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia Coastal Zone Management Program (VCP) (previously called the Virginia Coastal Resources Management Program). The VCP is comprised of a network of programs administered by several agencies. In order to be consistent with the VCP, the federal agency must obtain all the applicable permits and approvals listed under the Enforceable Policies of the VCP prior to commencing the project.

As indicated above ("Project Description"), the Draft EIS includes a federal consistency determination (Appendix H), by which the Navy states that the proposed activities will be consistent, to the maximum extent practicable, with the enforceable policies of the Virginia Coastal Zone Management Program (VCP).

### **Federal Consistency Public Participation**

In accordance with 15 CFR § 930.2, public notice of the proposed action was published on DEQ's web site from August 7, 2012 to August 28, 2012. No public comments were received in response to the notice.

### **Federal Consistency Concurrence**

Based on our review of the Navy's consistency determination, and the comments and recommendations submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that the proposed actions are consistent, to the maximum extent practicable, with the VCP. However, other state approvals which may apply to this project are not included in this concurrence. Therefore, the Navy must ensure that this project is constructed and operated in accordance with all applicable federal, state, and local laws and regulations. We encourage the Navy to consider the Advisory Policies of the VCP as well (see Attachment 2).

S009.13

## **REGULATORY AND COORDINATION NEEDS**

### **1. Solid and Hazardous Waste Management.**

**1(a) Coordination.** For further information on the administrative records of the pollution complaint (PC) cases in close proximity to the project area, the Navy may contact DEQ's Northern Regional Office (Richard Doucette, telephone (703) 583-3813).

General questions relating to waste management may be directed to DEQ's Division of Land Protection and Revitalization (Steve Coe, telephone (804) 698-4029).

**1(b) Authorities.** The state and federal laws which apply to waste management include, but are not limited to, the following.

Virginia:

- Virginia Waste Management Act, Virginia Code sections 10.1-1400 *et seq.*;
- Virginia Hazardous Waste Management Regulations, 9 VAC 20-60;  
For lead-based paint, see 9 VAC 20-60-261
- Virginia Solid Waste Management Regulations, 9 VAC 20-80;  
For asbestos-containing materials, see 9 VAC 20-80-640;
- Virginia Regulations for the Transportation of Hazardous Materials, 9 VAC 20-110.

Federal:

- Resource Conservation and Recovery Act (RCRA), 42 U.S.C. sections 6901 *et seq.*;
- Applicable regulations contained in Title 40, *Code of Federal Regulations*;
- U.S. Department of Transportation, *Rules for Transportation of Hazardous Materials*, 49 CFR Part 107.

## 2. Natural Heritage and Wildlife Resources.

**2(a) Coordination regarding Bald Eagles.** The Department of Game and Inland Fisheries (DGIF) recommends that the Navy consult with that Department (begin with Amy Ewing, telephone (804) 367-2211 or e-mail [amy.ewing@dgif.virginia.gov](mailto:amy.ewing@dgif.virginia.gov)) and also with the U.S. Fish and Wildlife Service (begin with Cindy Schultz, Virginia Field Office, telephone (804) 693-6694) for activities as follows:

- Within the designated concentration zone, or
- Resulting in bald eagle habitat alterations within 660 feet of any active bald eagle nest.

See "Environmental Impacts and Mitigation," item 6(b)(i), above.

In addition, where construction, restoration, or relocation activities are proposed within Anadromous Fish Use Waters, DGIF recommends consultation with the Department, as above, and also with NOAA Fisheries (David O'Brien, e-mail [David.O'Brien@NOAA.gov](mailto:David.O'Brien@NOAA.gov)). See "Environmental Impacts and Mitigation," item 6(b)(ii), above.

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**2(b) Additional Information.** For updated information concerning natural heritage resources, the Navy may contact the Department of Conservation and Recreation's Division of Natural Heritage (Rene' Hypes, telephone (804) 371-2708).

Questions regarding the Department of Game and Inland Fisheries database may be directed to DGIF (Gladys Cason, telephone (804) 367-0909 or e-mail [Gladys.Cason@dgif.virginia.gov](mailto:Gladys.Cason@dgif.virginia.gov)).

**2(c) Authorities.** Laws governing natural heritage and wildlife resources include, but are not limited to, the following:

- Virginia Natural Area Preserves Act, Virginia Code sections 10.1-209 through 10.1-217 (see "Environmental Impacts and Mitigation," item 5(a)(i), above);
- Virginia Endangered Species Act, Virginia Code sections 29.1-563 through 29.1-570 (see "Environmental Impacts and Mitigation," item 5(d), above);
- Virginia Endangered Plant and Insect Species Act, Virginia Code Chapter 39, sections 3.1-102 through 3.1-1030 (see "Environmental Impacts and Mitigation," item 5(a)(ii), above).

### **3. Air Pollution Control.**

**3(a) Coordination.** Questions on permitting and other matters affecting air pollution control should be directed to DEQ's Northern Regional Office (Terry Darton, Air Permits Manager, telephone (703) 583-3845).

**3(b) Authorities.** The regulations which might apply to this project include, but are not limited to, the following:

- 9 VAC 5-50-60 through 9 VAC 5-50-120, the Fugitive Dust/Fugitive Emissions Rule;
- 9 VAC 5-80, Article 6, Permits for New and Modified Sources.
- 9 VAC 5-130 *et seq.*, Open Burning.

**4. Water Permitting.** As DEQ's Northern Regional Office (DEQ-NRO) indicates, water resource impacts from the proposed action appear negligible, and not likely to require permitting. In the event this circumstance should change, the Navy should be aware of permitting requirements.

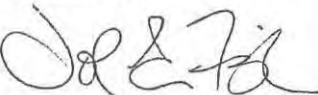
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**4(a) Coordination.** Inquiries regarding water quality permits should be directed to DEQ-NRO (Bryant Thomas, telephone (703) 583-3843 for VPDES (point-source discharge) permits, or Trisha Beasley, telephone (703) 583-3845 for Virginia Water Protection permits (wetlands, surface water impacts).

**4(b) Authority.** Virginia Water Protection permits are governed by Virginia's water regulations at 9 VAC 25-210-60 B.11.

Thank you for the opportunity to review the Draft EIS and the Federal Consistency Determination for the proposed Outdoor Research, Development, Test, and Evaluation Activities at the NSWC at Dahlgren. Detailed comments of reviewing agencies are attached for your review. If you have questions, please feel free to call me at (804) 698-4325 or Charles Ellis at (804) 698-4195.

Sincerely,

  
for Ellie Irons, Program Manager  
Environmental Impact Review

Enclosures

Ec: Dell Cheatham, DEQ-NRO  
G. Stephen Coe, DEQ-DLPR  
Kotur S. Narasimhan, DEQ-DAPC  
Tony Watkinson, VMRC  
Amy Ewing, DGIF  
Robbie Rhur, DCR  
Keith R. Tignor, VDACS  
Barry Matthews, VDH  
Marc E. Holma, DHR  
Pamela Mason, VIMS  
Scott Denny, DoAv

Cc: Tim Ware, GWRC  
Travis Quesenberry, King George County



## Fisher, John (DEQ)

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**From:** Ewing, Amy (DGIF)  
**Sent:** Wednesday, September 26, 2012 12:32 PM  
**To:** Fisher, John (DEQ)  
**Cc:** Cason, Gladys (DGIF); Cooper, Jeff (DGIF); Greenlee, Bob (DGIF)  
**Subject:** ESSLog# 25464\_12-152F\_Outdoor Research, Development, Test and Evaluation Activities\_Dahlgren

We have reviewed the subject project that proposes to perform increased training, research, and testing activities within the Potomac River Test Range and Explosives Experimental Area complexes, the Mission Area, and special-use airspace at Naval Support Facility Dahlgren (Dahlgren).

According to our records and as reflected in the EIS, a number of state Threatened bald eagle nests are known from Dahlgren. In addition, the shoreline of the Potomac River upstream of Dahlgren has been designated a bald eagle concentration zone. We recommend coordination with us and the USFWS for any activities resulting in bald eagle habitat alterations within 660ft of any active bald eagle nest or within the designated concentration zone. Although increased activities generating more frequent loud noise may temporarily impact nesting, roosting, or foraging eagles, the eagles occupying territory at Dahlgren are likely to be habituated to loud noise emanating from Dahlgren. We recommend adherence to the currently approved Integrated Natural Resources Management Plan (INRMP) for Dahlgren, including adherence to protective measures for bald eagles and their habitats.

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The Potomac River, Upper Machodoc Creek, Gambo Creek, and Williams Creek have been designated Anadromous Fish Use Areas. We recommend that any construction, restoration, or relocation activities within these waters be coordinated with us and NOAA Fisheries. We recommend adherence to the currently approved Integrated Natural Resources Management Plan (INRMP) for Dahlgren, including adherence to protective measures for Anadromous fishes and their habitats.

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Assuming adherence to all necessary BMP's, we find this project consistent with the Fisheries Management Section of the CZMA.

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Thanks, Amy

**Amy Ewing | Environmental Services Biologist | VDGIF - Richmond HQ | 4010 West Broad St. Richmond, VA 23230 | 804-367-2211 | [www.dgif.virginia.gov](http://www.dgif.virginia.gov)**

## **Fisher, John (DEQ)**

---

**From:** Forsgren, Diedre (VDH)  
**Sent:** Friday, September 21, 2012 3:47 PM  
**To:** Fisher, John (DEQ)  
**Subject:** (12-152F) CD: Outdoor Research, Development, Test, and Evaluation Activities, Naval Surface Warfare Center Dahlgren

**DEQ Project #:** 12-152F  
**Name:** Outdoor Research, Development, Test, and Evaluation Activities, Naval Surface Warfare Center Dahlgren  
**Sponsor:** DOD/Department of the Navy  
**Location:** King George County

The Department of Health-Office of Drinking Water has reviewed the above captioned project and the information provided.

Proximity to public water supplies are limited to NSF Dahlgren and are as noted in the project documentation. Potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the NSF Dahlgren.

Drinking water resources are unlikely to be impacted by this project.

] S012.1

### **Diedre Forsgren**

Office Services Specialist  
VIRGINIA DEPARTMENT OF HEALTH  
Office of Drinking Water, Room 622-A  
109 Governor Street  
Richmond, VA 23219  
Phone: (804) 864-7241  
email: [diedre.forsgren@vdh.virginia.gov](mailto:diedre.forsgren@vdh.virginia.gov)



**Fisher, John (DEQ)**

---

**From:** Holma, Marc (DHR)  
**Sent:** Friday, September 21, 2012 11:53 AM  
**To:** Fisher, John (DEQ)  
**Subject:** Outdoor Research, Development, Test, and Evaluation Activities, Naval Surface Warfare Center Dahlgren, King George Co., (DHR #2009-0099; DEQ #12-152F)

John,

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The Navy has already consulted with DHR on this undertaking pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. We believe that the undertaking will have No Adverse Effect to historic properties listed in or eligible for the National Register of Historic Places and the Virginia Landmarks Register. ]

Sincerely,

Marc Holma



**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

203 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-1712

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**MEMORANDUM**

**DATE:** September 21, 2012  
**TO:** John Fisher, DEQ  
**FROM:** Roberta Rhur, Environmental Impact Review Coordinator  
**SUBJECT:** DEQ 12-152F, Outdoor Research and Testing Activities, Naval Surface Warfare Center Dahlgren

**Division of Natural Heritage**

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Little Ferry, Gambo Creek, Gambo Creek South and Tetotum Flats Conservation Sites are located within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Little Ferry, Gambo Creek, Gambo Creek South and Tetotum Flats Conservation Sites have all been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at these sites is:

*Haliaeetus leucocephalus*

Bald eagle

G5/S2S3B,S3N/NL/LT

The Bald eagle breeds from Alaska eastward through Canada and the Great Lakes region, along coastal areas off the Pacific and Atlantic Oceans, and the Gulf of Mexico, and in pockets throughout the western United States (NatureServe, 2009). In Virginia, it primarily breeds along the large Atlantic slope rivers (James, Rappahannock, Potomac, etc) with a few records at inland sites near large reservoirs (Byrd, 1991). Bald eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald eagles feed on fish, waterfowl, seabirds (Campbell et. al., 1990), various mammals and carrion (Terres, 1980). Please note that this species is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

*State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning  
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation*

Threats to this species include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply and illegal shooting (Herkert, 1992).

Due to the legal status of the Bald eagle, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or [Gladys.Cason@dgif.virginia.gov](mailto:Gladys.Cason@dgif.virginia.gov)).

#### Division of Stormwater Management

A review of the project indicates that there is no construction proposed; therefore, this division has no comment.

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

Cc: Amy Ewing, VDGIF



#### Literature Cited

- Byrd, M.A. 1991. Bald eagle. In *Virginia's Endangered Species: Proceedings of a Symposium*. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. Pp. 499-501.
- Campbell, R.W., N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G.W. Kaiser, and M.C.E. McNall. 1990. *The Birds of British Columbia. Vol. 1. Nonpasserines: Introduction and loons through waterfowl*. Royal British Columbia Museum, Victoria, British Columbia, Canada.
- Herkert, J. R., editor. 1992. *Endangered and threatened species of Illinois: status and distribution. Vol. 2: Animals*. Illinois Endangered Species Protection Board. iv + 142 pp.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 24, 2010)
- Terres, J.K. 1980. *The Audubon Society encyclopedia of North American birds*. Alfred A. Knopf, New York.



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## MEMORANDUM

**TO:** John Fisher, Environmental Program Planner

**FROM:** Steve Coe, DLPR EIR Review Coordinator

**DATE:** September 20, 2012

**COPIES:** Sanjay Thirunagari, Hazardous Waste Program Manager  
EIR File

**SUBJECT:** EIR Project – Outdoor Research, Development, Test and Evaluation Activities, Naval Surface Warfare Center Dahlgren – DOD/U.S. Navy – DEQ Project No. 12-152F – Review

Staff from the Division of Land Protection and Revitalization (DLPR) has completed its review of the EIR Project – Outdoor Research, Development, Test and Evaluation Activities, Naval Surface Warfare Center Dahlgren Division (NSWCDD), Virginia, under the Department of Defense / U.S. Navy. The project site is under the zip code areas 22448 and 22485. We have the following comments concerning the project, and possible related waste issues associated with this project:

The submittal addressed potential solid waste and/or hazardous waste issues. Specifically, the submittal states "NSF (Naval Support Facility) Dahlgren and NSWCDD have in place a number of programs, plans, and processes to safely use, transport, handle, store, and dispose of HM (hazardous material) and HW (hazardous waste). The submittal does not state that DEQ's databases were searched, nor do they indicate that information was obtained from the DEQ's DLPR files.

The DLPR staff has conducted a cursory review of its database files under zip codes 22448 and 22485 including a VEGIS database search (0.25 mile radius) of the project site and determined the information below:

A few waste facility sites were located within the same zip code of the proposed project under zip codes 22448 and 22485. However, the proximity of the identified waste sites to the project site and/or potential impact to the project should be further evaluated.

The staff's summary comments are as follows:

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### Hazardous Waste Facilities

Search of the RCRAInfo database found the following facility under large quantity generators (LQGs) and/or permitted treatment, storage, disposal facilities (TSDF):

- 1) Gautiers Autobody & Glass Inc., P.O. Box 1118 Hwy 206, Dahlgren, VA 22448. ID# VA0000464321. Contact: Bryan Gautier at 703-663-3439.
- 2) Mid-Atlantic Military Family Commission LLC MAMFC, Dahlgren Road #142 Housing, Dahlgren, VA 22448. ID# VAR000513457. Contact: R. Jarl Bliss at 703-834-1900.



- 3) U.S. Navy Dahlgren, Samson Road, Dahlgren, VA 22448. ID# VA7170024684. Contact: Heidi Morgan at 540-653-2035.
- 4) Walmart Supercenter #5779, 16375 Merchant Lane, King George, VA 22448. ID# VAR000520205. Contact: Chris Stewart at 479-204-0402.
- 5) Wa Wa Food Market, Rts 301 & 206, Dahlgren, VA 22448. ID# VAr000014209. Contact: Mathew Winters at 610-558-8345.

(See also: <http://www.epa.gov/enviro/facts/rcrainfo/search.html>).

#### **Solid Waste Facilities** - none

#### **CERCLA Sites**

Search of the CERCLIS database found the following Superfund site:

<u>EPA ID #</u>	<u>Facility Name</u>	<u>Address</u>	<u>Status</u>
• VA7170024684	NAVAL SURFACE WARFARE CENTER - DAHLGREN	Dahlgren, VA, 22448	Final NPL – See link at: <a href="http://www.epa.gov/reg2hwmd/npl/va7170024684.htm">http://www.epa.gov/reg2hwmd/npl/va7170024684.htm</a>

The Federal Facilities Restoration Program recommends contacting Ms. Heidi Morgan of the installation at [heidia.morgan@navy.mil](mailto:heidia.morgan@navy.mil) for additional information concerning CERCLA obligations at this installation.

#### **FUDs Sites**

Search of the Formerly Used Defense Sites (FUDS) Inventory found the following facility:

<u>FUDS #</u>	<u>Federal Facilities (FF) ID</u>	<u>Facility Name</u>	<u>City / Zip</u>
• C03VA0999	VA9799F1723	NAVAL WEAPONS LAB	Dahlgren / 22485

If the above identified site is found to be in close proximity to the proposed project, then further information regarding the above identified site may be in order. For the location and further information regarding the above FUDS site, please contact Karen Sismour, Federal Facilities Program Manager, Office of Remediation Programs (ORP), DEQ (804-698-4421).

#### **VRP Sites**

No Voluntary Remediation Program (VRP) facilities were found during search of DEQ's VRP Site Inventory.

#### **Petroleum Release Sites**

The following petroleum release sites were found within 0.25 miles of the project site (from the DEQ's Virginia Environmental Geographic Information System (VEGIS)):

- 1) Dahlgren Marine Works, 17088 Ferry Dock Road, Dahlgren, VA 22448. PC# 19910850. Date: 3/7/2007. Status: Closed.
- 2) Turnure Robert L. residence, 17081 12<sup>th</sup> Street, Dahlgren, VA 22448. PC# 19973846. Date: 5/4/2007. Status: Closed.
- 3) Kelly John residence, 5282 N. Williams Creek Drive, Dahlgren, VA 22485. PC# 20033158. Date: 4/30/2007. Status: Closed.



- 4) Tran Tien Tung or Christine Duong residence, 16404 Dahlgren Road, King George, VA 22485. PC# 20113178. Date: 4/44/2011. Status: Closed.

(Note: Dates above are the latest PC database edit dates of the specific petroleum contamination sites identified above.)

Please note that the DEQ's petroleum contamination (PC) case files, within 0.25 miles of the proposed project, should be evaluated by the project engineer or manager to establish the exact location of the petroleum release, the nature and extent of the release, and the potential to impact the proposed project. The facility representative should contact the DEQ's NRO for further information on the administrative records of the PC cases which are in close proximity to the proposed project.

(NRO Pollution Response and Tank Program Contact: <http://www.deq.virginia.gov/regions/northern.html>.)

## **GENERAL COMMENTS**

### **Soil, Sediment, and Waste Management**

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Part 107.

Please note that any contaminated media which is generated from the facility project site is the responsibility of the subject site facility which must ensure that contaminated media undergoes proper management, storage, treatment, and disposal in accordance with the above noted State Regulations.

### **Pollution Prevention – Reuse - Recycling**

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

S009.7

If you have any questions or need further information, please contact Steve Coe at (804) 698-4029.

## **Fisher, John (DEQ)**

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**From:** Cheatham, John (DEQ)  
**Sent:** Monday, September 17, 2012 3:31 PM  
**To:** Fisher, John (DEQ)  
**Subject:** 12-152F: Naval Surface Warfare Center Dahlgren

NRO comments regarding the Outdoor Research, Development, Test, and Evaluation Activities at Naval Surface Warfare Center Dahlgren are as follows:

**Land Protection Division** - If any solid or hazardous waste is generated/encountered during construction, the facility should follow applicable federal, state, and county regulations for their disposal.

**Air Compliance/Permitting** - The project manager is reminded that during any construction phases that occur with this project; the project is subject to the Fugitive Dust/Fugitive Emissions Rule 9 VAC 5-50-60 through 9 VAC 5-50-120. In addition, should the project install fuel burning equipment (Boilers, Generators, Compressors, etc...), or any other air pollution emitting equipment, the project may be subject to 9 VAC 5-80, Article 6, Permits for New and Modified sources and as such the project manager should contact the Air Permit Manager DEQ-NRO prior to installation or construction, and operation, of fuel burning or other air pollution emitting equipment for a permitting determination.

**Virginia Water Protection Permit (VWPP) Program** - The project does not currently propose impacts to surface waters; however a VWP permit from DEQ may be required should impacts to surface waters be necessary. DEQ VWP staff recommends that the project avoid and minimize impacts to the surface waters to the maximum extent practicable. Upon receipt of a Joint Permit Application for the proposed surface waters impacts, DEQ VWP Permit staff will review the proposed project in accordance with the VWP permit program regulations and guidance.

According to 9 VAC 25-210-60 B. 11.

S009.1

**Water Permitting/VPDES Program**: The plan indicates that all project alternatives will have negligible impacts on water resources. Because there would be no personnel or operational needs for additional water associated with any alternatives, there would be no increase in the production of wastewater. The Navy-owned municipal sewage treatment plant located at the southern end of Mainside would not be affected and would continue to meet current and future wastewater requirements.

As specific projects implemented under this plan advance, further review may be required. Specific projects should be initiated only after the environmental review has been completed and required permits are obtained.

**Dell Cheatham**

VWP Permit Writer - Virginia Department of Environmental Quality  
Northern Regional Office - 13901 Crown Court, Woodbridge, VA 22193  
703-583-3805



DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF AIR PROGRAM COORDINATION

RECEIVED

AUG 31 2012

DEQ-Office of Environmental  
Impact Review

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: John E. Fisher

DEQ - OEIA PROJECT NUMBER: 12 - 152F

PROJECT TYPE: ☐ STATE EA / EIR ☒ FEDERAL EA / EIS ☐ SCC  
☐ CONSISTENCY DETERMINATION

PROJECT TITLE: OUTDOOR, RESEARCH, DEVELOPMENT, TEST, AND EVALUATION  
ACTIVITIES, NVAL CENTER WARFARE CENTER DAHLGREN

PROJECT SPONSOR: DOD / DEPARTMENT OF THE NAVY

PROJECT LOCATION: ☒ OZONE ATTAINMENT AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO: ☒ CONSTRUCTION  
☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E - STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F - STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. - Asphalt Paving operations
4. ☒ 9 VAC 5-130 et seq. - Open Burning
5. ☒ 9 VAC 5-50-60 et seq. Fugitive Dust Emissions
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to \_\_\_\_\_
7. ☐ 9 VAC 5-50-160 et seq. - Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart \_\_\_\_\_, Standards of Performance for New Stationary Sources, designates standards of performance for the \_\_\_\_\_
9. ☐ 9 VAC 5-80-1100 et seq. of the regulations - Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations - Major or Modified Sources located in PSD areas. This rule may be applicable to the \_\_\_\_\_
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations - New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations - Operating Permits and exemptions. This rule may be applicable to \_\_\_\_\_

COMMENTS SPECIFIC TO THE PROJECT:

*K. S. Narasimhan*

(Kotur S. Narasimhan)  
Office of Air Data Analysis

DATE: August 31, 2012

## Attachment 2

### Advisory Policies for Geographic Areas of Particular Concern

- a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:
  - a) Wetlands
  - b) Aquatic Spawning, Nursery, and Feeding Grounds
  - c) Coastal Primary Sand Dunes
  - d) Barrier Islands
  - e) Significant Wildlife Habitat Areas
  - f) Public Recreation Areas
  - g) Sand and Gravel Resources
  - h) Underwater Historic Sites.
- b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:
  - i) Highly Erodible Areas
  - ii) Coastal High Hazard Areas, including flood plains.
- c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:
  - i) Commercial Ports
  - ii) Commercial Fishing Piers
  - iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

- i) water access dependent activities;
- ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.



### Advisory Policies for Shorefront Access Planning and Protection

- a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.
- b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.
- c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.
- d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.
- e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.
- f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

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**LOCAL GOVERNMENT**  
**COMMENTS**

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**ST. MARY'S COUNTY GOVERNMENT**  
**BOARD OF COUNTY**  
**COMMISSIONERS**



Francis Jack Russell, President  
Lawrence D. Jarboe, Commissioner  
Cynthia L. Jones, Commissioner  
Todd B. Morgan, Commissioner  
Daniel L. Morris, Commissioner

September 11, 2012

Captain Michael Smith, Commander,  
Naval Surface Warfare Center, Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117

Dear Captain Smith:

St. Mary's County received your notice and copy of the draft Environmental Impact Statement (EIS) for the referenced activities at your installation. The County is hereby forwarding a copy of the St. Mary's County Regional Airport Master Plan Executive Summary for review and incorporation into the final document record. Our Department of Public Works and Transportation staff will be forwarding additional documentation during the public comment period, which we understand expires on October 1, 2012. It is our intent to ensure that the proposed action does not impact either current or future availability of instrument approaches and other airspace or operational matters concerning our Regional Airport.

L001.1

L001.2

We look forward to coordinating your proposed action with the County's long-range plans to develop St. Mary's County Regional Airport. Please add our input to the draft EIS text that already includes NAS Patuxent River and Webster Field. If you have any questions, please do not hesitate to contact us.

Sincerely,  
BOARD OF COUNTY COMMISSIONERS  
ST. MARY'S COUNTY, MARYLAND

*Francis Jack Russell*  
Francis Jack Russell, President

*Lawrence D. Jarboe*  
Lawrence D. Jarboe, Commissioner

*Cynthia L. Jones*  
Cynthia L. Jones, Commissioner

*Todd B. Morgan*  
Todd B. Morgan, Commissioner

*Daniel L. Morris*  
Daniel L. Morris, Commissioner

Enclosure

T:All/Consent/7056

cc: Captain Ted Mills, CO NAS Pax River  
Tom Priscilla, FAA WADO  
Ashish Solanki, A.A.E, MAA  
Airport Advisory Committee

P.O. BOX 653 • CHESAPEAKE BUILDING • 41770 BALDRIDGE ST., LEONARDTOWN, MD 20650  
PHONE 301.475.4200 x1300 • FAX 301.475.4935 • [www.stmarysmd.com](http://www.stmarysmd.com) • [BOCC@STMARYSMD.COM](mailto:BOCC@STMARYSMD.COM)



**CAPT. WALTER FRANCIS DUKE  
REGIONAL AIRPORT AT ST. MARY'S  
Leonardtown, Maryland**



**AIRPORT MASTER PLAN UPDATE**

**FINAL  
AUGUST, 2002  
EXECUTIVE SUMMARY**



**DELTA**  
**AIRPORT CONSULTANTS, INC.**  
*engineers - planners*

## EXECUTIVE SUMMARY

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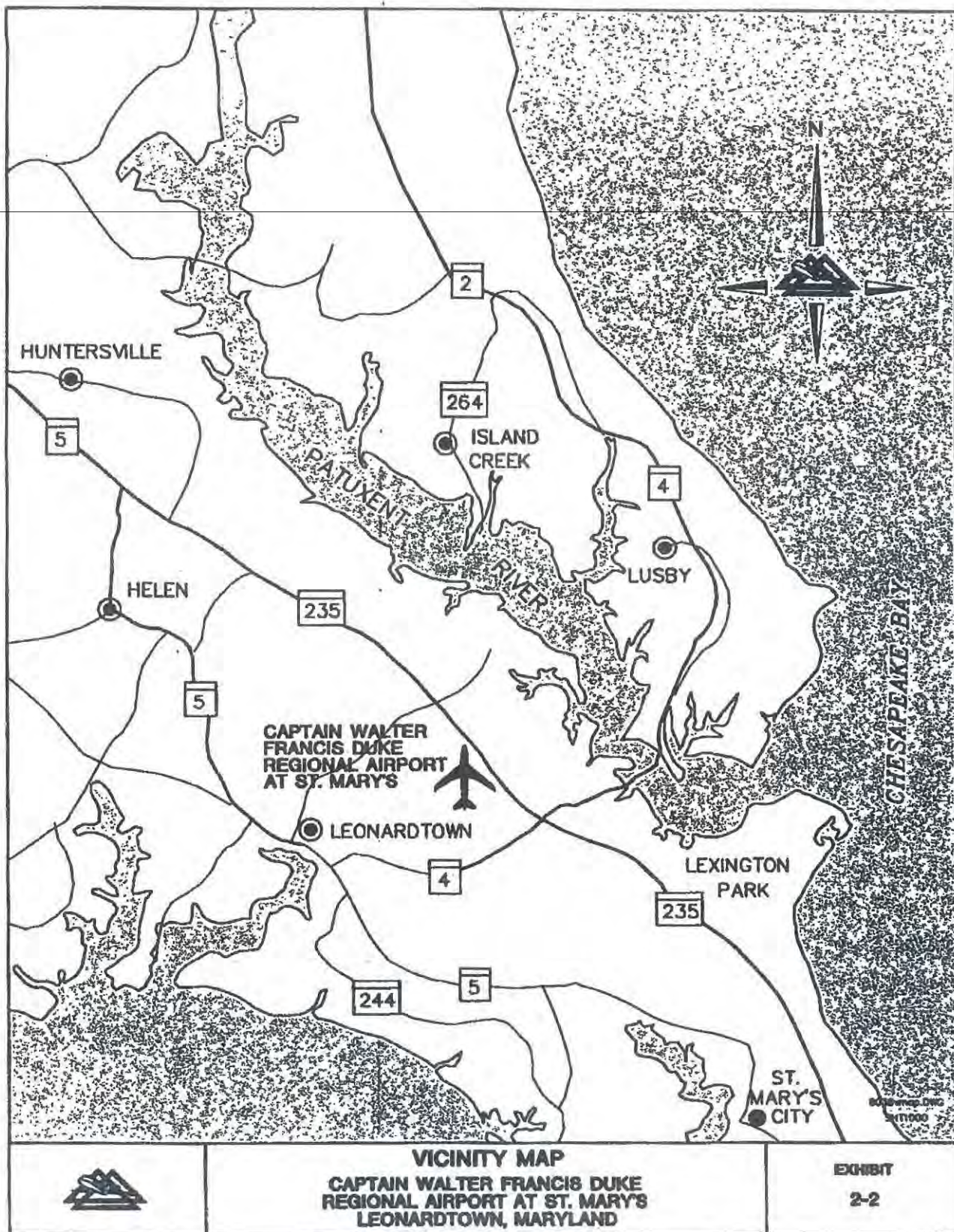
Captain Walter Francis Duke Regional Airport at St. Mary's (2W6) is a general aviation airport located in St. Mary's County approximately four (4) miles northeast of Leonardtown, Maryland. (See Vicinity Map). This general aviation airport is owned and operated by St. Mary's County. In order to provide a plan for future development in an efficient and rational manner, the County contracted with Delta Airport Consultants, Inc. in August, 1998 to prepare a Master Plan Update for the Airport. The Master Plan Update was funded under a planning grant from the Federal Aviation Administration (FAA) and the Maryland Aviation Administration (MAA).

Captain Walter Francis Duke Regional Airport at St. Mary's was originally constructed in 1969 utilizing federal and local funding Airport. The previous Master Plan was prepared in 1979 and Airport Layout Plan Updates were published in 1988 and 1993.

Since that time, the region has experienced significant growth and the Airport has undergone numerous changes and improvements. In addition, the Airport is interested in developing the facilities to ultimately support commuter service operations.

The National Plan of Integrated Airports System (NPIAS) (1993 - 1997) lists Captain Walter Francis Duke Regional Airport at St. Mary's as a general aviation airport. The Maryland Airport System Plan, latest release dated January, 1998, also classifies the Airport as a general aviation airport. Based on the fleet mix of aircraft currently utilizing the Airport on a regular basis, an aircraft approach category of 'B' determined by approach speed, and the airplane design group of II determined by the wing span. Therefore, the current Airport Reference Code (ARC) for the Airport is B-II. The critical aircraft at the Airport is a Beech Super King Air B200.







The inventory of the Airport facilities creates the footprint for the remaining section of the Master Plan as well as serving as a building block for future Airport development and forecasts. The growing region of Southern Maryland consists of Calvert County, Charles County and St. Mary's County. The County is governed by an elected five (5) member Board of County Commissioners and Leonardtown is the county seat of St. Mary's County. Captain Walter Francis Duke Regional Airport at St. Mary's is owned and operated by St. Mary's County.

## FORECASTS

Aviation demand forecasts are a key element in developing and/or updating an Airport Master Plan. The aviation industry is quite dynamic and is undergoing significant changes. It is important that the master plan reflects recent aircraft activity, expectations of future activity, and also reflects the County's mission to promote air service as an essential tool in economic development. Table 1 represents a summary of the forecasts for Captain Walter Francis Duke Regional Airport at St. Mary's over the twenty year planning period. These forecasts indicate that all aspects of aviation demand at the Airport will continue to grow during the planning period. Ongoing development will enable the Airport to continue to accommodate the growth in aviation demand and contribute to the economic vitality of the service area.



TABLE 1

CAPTAIN WALTER FRANCIS DUKE REGIONAL AIRPORT AT ST. MARY'S  
FORECAST SUMMARY

FORECAST ELEMENT	YEAR			
	1998	2005	2010	2020
<b>Based Aircraft</b>				
<i>Single Engine</i>	76	87	92	100
<i>Multi-Piston</i>	5	6	7	9
<i>Multi-Turbine</i>	0	1	2	4
<i>Business Jet</i>	0	0	1	2
<i>Rotocraft</i>	1	1	1	1
<b>TOTAL:</b>	82	96	103	116
<b>Annual Operations</b>				
<i>General Aviation</i>	45,000	53,000	55,000	62,000
<b>General Aviation Operations by Aircraft Type</b>				
<i>Single Engine</i>	41,850	48,124	49,060	53,320
<i>Multi-Piston</i>	2,700	3,498	3,905	4,960
<i>Multi-Turbine</i>	0	504	880	1,860
<i>Business Jet</i>	0	339	605	1,240
<i>Rotocraft</i>	450	530	550	620

**FACILITY REQUIREMENTS**

Facility requirements were predicted on the existing and forecasted aviation demand. These requirements are needed to satisfy the increasing short-term and long-term ranges of aviation needs of the community. The methodology used to determine facility requirements begins with an examination of the major components of the Airport system: airspace, airfield, buildings and surface access. Any deficiencies in the Airport's facilities are identified based upon standards presented in FAA Advisory Circular (AC) 150/5300-13 (Change 6) "Airport Design".



- Runway 11-29

Runway 11-29 is the single runway for Captain Walter Francis Duke Regional Airport at St. Mary's. Runway 11-29, at 4,150' long x 75' wide, is recommended to be extended 1,200 feet to a length of 5,350 feet in Phase I of the planning period.

#### Runway Safety Area

- Runway 11-29 currently meets the required RSA width of 150 feet and the required RSA length beyond the runway end of 300 feet. Therefore, the current RSA should be maintained throughout the planning period, and extended as necessary to accommodate the runway extension.

#### Runway Object Free Area

- Runway 11-29 currently meets the required runway OFA width of 500 and the required OFA length of 300 feet beyond the runway end for a B-II facility with approach minimum not lower than  $\frac{3}{4}$  statute mile. The existing runway OFA should be maintained throughout the duration of the planning period, and extended as necessary to accommodate the runway extension.

#### Runway Obstacle Free Zone

- Runway 11-29 currently meets the required runway OFZ width of 400 feet and extends 200 feet beyond each runway end any future improvements will be evaluated with respect to the runway OFZ criteria.

#### Runway Protection Zone

- The Runway Protection Zone (RPZ) is trapezoidal in shape and centered on the extended runway centerline. The function of the RPZ is to enhance the protection of people and property on the ground. Airport owner control is preferably exercised through the acquisition of sufficient property interest in the RPZ.





Additional property and easement acquisition is proposed in Phase I of the planning period.

#### Airfield Pavement Strength

- Runway 11-29 was extended and overlaid in 1996. The resulting pavement strength is approximately 20,000 lbs single wheel. To allow the Airport to accommodate a wider variety of B-II aircraft, it is recommended that the pavement be strengthened to accommodate 30,000 lbs single wheel during Phase I of the planning period.

#### Taxiways

- Additions or improvements to an airport taxiway system are typically undertaken to increase airport capacity, for operational efficiency, and to enhance safety. The existing taxiway system consists one partial parallel taxiway, three connector taxiways and a turnaround. The current parallel taxiway to runway centerline separation is 207 feet. This does not meet the 240 feet separation required by design standards for B-II airports with no lower than  $\frac{3}{4}$  statute mile approach visibility minimums. It is recommended that the partial parallel taxiway be relocated and extended to a separation of the required 240 feet during Phase I of the planning period.

#### Airport Lighting and Visual Aids

- Airport lighting and visual aids assist the pilot in locating the landing environment and airport facilities during adverse weather conditions. Both Runway 11 and Runway 29 are equipped with 2-box Precision Approach Path Indicator (PAPIs). To accommodate the forecasted business jet operations, 4-box PAPIs are recommended for each runway end during Phase II of the planning period. Both Runway 11 and Runway 29 have omnidirectional Runway End Identifier Lights





(REILs). It is recommended that the Runway 11 REILs be replaced by an approach lighting system.

#### Runway Edge Lights

- Runway 11-29 has pilot controlled Medium Intensity Runway Lights (MIRLs). This system should be sufficient for the duration of the planning period.

#### Taxiway Edge Lights

- A limited amount of Medium Intensity Taxiway Lights (MITLs) have been installed to delineate the taxiway turnoffs and midfield connector. To improve the visibility of the complete taxiway system, it is recommended that additional MITLs be installed during Phase I of the planning period as part of the taxiway relocation and extension project.

#### Airfield Signs

- The Airport currently has mandatory holding signs for taxiway/runway intersection. Runway distance remaining signs are recommended for all runways used by turbojet aircraft, and is programmed for installation in Phase I of the planning period.

#### Land

- Approximately 50 acres of land is recommended to be placed under airport control through fee simple or avigation easement acquisition in Phase I of the planning period. Approximately three acres to accommodate the partial realignment of Airport Drive for the parallel taxiway relocation, approximately two acres for the relocation of Lawrence Hayden Road for the Runway 11 extension and approximately 40 acres of avigation easements to the north and east of the Runway 11 end.



#### Aircraft Apron

- Apron parking must be provided for 100% of the transient aircraft plus those based aircraft which are not stored in hangars. It is recommended that the existing grass tie-downs be replaced with paved apron space during Phase I and that any future tie-down areas be paved as well. Currently, the tie-down spaces available to based aircraft are almost fully occupied. Additional aircraft tie-down locations are recommended for construction during all phases of the planning period to meet the anticipated demand.

#### Aircraft Hangars

- Currently, approximately 45% of the based aircraft are stored in T-hangars. The available T-hangar space is full and a waiting list has been developed. Currently, there are four community hangars; the County Hangar, the ART Hangar, the Airpark Hangar and the Maryland State Police Hangar. It is recommended that an additional ten (10) T-hangars units be constructed during Phase I to meet anticipated demand, and an additional ten (10) units constructed during Phase III. The analysis of based aircraft also indicates that there is sufficient demand generated for corporate/community style hangars throughout the planning period.

#### Terminal Building

- Currently, the FBO Hangar and the County Hangar perform the function of a typical general aviation terminal building. A new terminal building was recently complete, and is slated to ultimately accommodate commercial service passengers. It is anticipated that three (3) facilities are sufficient to accommodate pilots and passengers for the duration of the planning period.

#### Auto Parking

- There are no exact parameters that can be applied to determine automobile parking requirements at small airports. However, the auto parking was expanded





significantly in conjunction with the construction of the air carrier terminal building. Future development plans will take into consideration the necessity for parking adjacent to the new building and hangars and the chosen configurations will facilitate possible future expansion.

#### Airport Access Road

- A segment of the existing airport access road will need to be realigned to accommodate the parallel taxiway relocation to achieve the 240 feet runway separation during Phase I of the planning period. It is anticipated that this roadway will need to be extended to keep pace with proposed airport development as the facilities expand to the west.

#### Fuel Facilities

- If the rate of fuel sales continues at the current rate of approximately 2.2 gallons of Avgas fuel per operations, the existing tanks should be sufficient to meet the requirement throughout the planning period. Jet fuel sales per operation are typically much higher than Avgas sales. With the forecasted increase in annual turbo-prop and jet operations, an additional 12,000 gallon Jet-A fuel tank is recommended during Phase II of the planning period.

#### Fencing

- The airside and landside are separated by a security fence on the south and east sides of the Airport. The remainder of the airport perimeter should be fenced during Phase I of the planning period enhanced security and wildlife protection.

#### Airport Electrical Vault

- The existing electrical vault is in good condition, however it is located immediately adjacent to the Object Free Area (OFA) for the proposed relocated parallel taxiway



and also to the air carrier apron. It is recommended that consideration be given to relocating this vault during Phase I of the planning period.

## ALTERNATIVE DEVELOPMENT AND ANALYSIS

This process deals with the description and evaluation of alternative plans for airside and landside development at the Airport. Once identified, the recommended alternative forms the basis for the development of the Airport Layout Plan (ALP). The existing facilities are designed to accommodate B-II (small) aircraft. This Airport Reference Code (ARC) accommodates aircraft with approach speeds less than 121 knots, wingspan less than 79 feet and weight less than 12,500 pounds. The current runway length is 4,150 feet.

Approximately seventeen alternatives were developed to achieve anywhere from B-II (small) Non-Precision Instrument (NPI) Approach of 1 mile from both Runway 11 and 29, to B-II (large) with NPI of ½ mile for Runway 11 and NPI of 1 mile for Runway 29, to C-II Precision Instrument Approach (PI) of ½ mile for Runway 11 and NPI of 1 mile for Runway 29. Alternatives included the evaluation of a new airport site in St. Mary's County, no-build option as well as the reorientation of the existing Runway 11-29.

Following a public presentation of the alternatives, the Board of County Commissioners decided for the Airport to remain a B-II facility for the 20 year planning period. Therefore, the Airport will be able to accommodate B-II (large) aircraft once 1.) the obstructions to the FAR Part 77, 34:1 approach surface and 7:1 transitional surfaces have been cleared and 2.) the parallel taxiway has been relocated to meet Group II separation standards.



## **ENVIRONMENTAL INVENTORY**

An environmental inventory was prepared to show the environmentally significant features within the existing boundaries of Captain Walter Francis Duke Regional Airport at St. Mary's. The main topics of this inventory included wetlands, noise and landfills. An overview was performed to generally recognize the potential impacts of airport development to these three environmental categories. It should be noted that the FAA has approved funding of a Comprehensive Environmental Assessment (EA) for the 5-year Airport Capital Improvement Program (ACIP) for Phase I of the planning period following the completion of this Master Plan update. This EA will include research, delineation, environmental agencies coordination and permitting where required. The EA will cover approximately 20 different environmental categories with the ultimate goal of obtaining a Finding Of No Significant Impacts (FONSI) from the FAA in order to accomplish the improvement projects in Phase I of the planning period.

## **AIRPORT MASTER PLAN DRAWINGS**

The Airport Master Plan (AMP) Drawings are used as a guide by the Federal Aviation Administration (FAA) and the Maryland Aviation Administration (MAA) to establish and fund facilities improvement and development. These drawings are a graphic representation of the existing airport facilities and proposed improvements throughout the planning period. The main drawing is the Airport Layout Plan (ALP) which indicates all pertinent clearance and dimensional information required to show conformance with applicable FAA standards. The ALP depicts the recommended location and configuration of facilities needed to meet the twenty year demand.



## RECOMMENDED AIRPORT CAPITAL IMPROVEMENT PROGRAM (ACIP)

The Master Plan Update delineates the recommended airport capital improvement program. The projects within the ACIP are identified by phase (time period), estimated cost in calendar year 2002 dollars, estimated AIP eligibility and anticipated implementation and completion date. Costs include design and engineering fees and a project contingency. There are four primary sources of funding which could be available to the Airport to fund projects within the ACIP. These four sources are as follows:

- Federal Aviation Administration (FAA) Funding
- Maryland Aviation Administration (MAA) Funding
- Local Funds, Airport funds and County Capital Project funds allocated by the County to the Airport
- Other Capital Funds: Private or Tenant Investment

Table 2 presents the airport capital improvement program for the Airport Master Plan Update.



**TABLE 2**  
**CAPTAIN WALTER FRANCIS DUKE REGIONAL AIRPORT AT ST. MARY'S**  
**PHASE I FUNDING SUMMARY (1998-2020)**

PHASE	PROJECT DESCRIPTION	ESTIMATED COSTS	FAA	FUNDING SOURCES		
				MAA	LOCAL	OTHER
I-1	Construct Localizer Antenna, Localizer Building / DME Antenna and Critical Area	\$350,000	-0-	\$175,000	\$175,000	
I-2	Upgrade Rotating Beacon	\$75,000	\$67,500	\$3,750	\$3,750	
I-3	Acquire Land for Airport Dr. Realignment	\$50,000	\$45,000	\$2,500	\$2,500	
I-4	Realign Airport Drive	\$550,000	\$495,000	\$27,500	\$27,500	
I-5	Relocate/Complete Taxiway "A"	\$1,200,000	\$1,080,000	\$60,000	\$60,000	
I-6	Acquire Land for Relocation for Lawrence Hayden Rd.	\$50,000	\$45,000	\$2,500	\$2,500	
I-7	Acquire Land for Apron, Access Road, State Police, Auto Parking & 80'x80' Corporate Hgr	\$100,000	-0-	\$50,000	\$50,000	
I-8	Relocate Lawrence Hayden Rd.	\$500,000	\$450,000	\$25,000	\$25,000	
I-9	1,200' Runway Extension; Relocate Threshold Lights and PAPI (Runway 11 End)	\$2,775,000	\$2,497,500	\$138,750	\$138,750	
I-10	Construct Airport Access Road	\$510,000	-0-	\$255,000	\$255,000	
I-11	Construct Apron (Runway 11 end)	\$2,400,000	\$2,160,000	\$120,000	\$120,000	
I-12	Acquisition of Property	\$250,000	\$225,000	\$12,500	\$12,500	
I-13	Construct 10 Unit T-Hangar & 80'x80' Corporate Hangar	\$700,000			\$700,000	
I-14	Helicopter Operating Area	\$100,000	\$90,000	\$5,000	\$5,000	





PHASE	PROJECT DESCRIPTION	ESTIMATED COSTS	FAA	FUNDING SOURCES		
				MAA	LOCAL	OTHER
I-15	Relocate State Police Operations/Auto Parking	\$50,000	-0-	\$25,000	\$25,000	

**PHASE II FUNDING SUMMARY (2005-2010)**

PHASE	PROJECT DESCRIPTION	ESTIMATED COSTS	FAA	FUNDING SOURCES		
				MAA	LOCAL	OTHER
II-1	Upgrade PAPI (Runway 29 End)	\$12,000	\$10,800	\$600	\$600	
II-2	Construct Fuel Farm	\$300,000	-0-	-0-	\$300,000	
II-3	Construct Airfield Maintenance Equip. Storage	\$75,000	\$62,500	\$3,750	\$3,750	
II-4	Construct 80'x80' Corporate Hanger/Auto Parking	\$400,000	-	-	\$400,000	

**PHASE III FUNDING SUMMARY (2010-2020)**

PHASE	PROJECT DESCRIPTION	ESTIMATED COSTS	FAA	FUNDING SOURCES		
				MAA	LOCAL	OTHER
III-1	Construct 80'x80' & 80'x100' Corporate Hangars/Auto Parking	\$815,000	-	-	\$815,000	
III-2	Construct 10 Unit T-Hangar	\$350,000	-	-	\$350,000	

Source: Delta Airport Consultants, Inc. Analysis





## SUMMARY

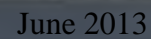
The value of Captain Walter Francis Duke Regional Airport at St. Mary's to the local communities and the National Airport System is significant. The importance of an airport with modern, up to date facilities, should not be underestimated.

Air transportation increases and improves communications by bringing people together for business, social, recreational and cultural purposes. The region has been prudent in modernizing and development a first class transportation facility.

The Airport Master Plan Update has identified approximately \$12 million in future airport improvements needed to accommodate the existing and future aviation demand for the twenty year planning horizon (1998-2020). The master plan should allow the airport to continue to prosper and accommodate the region's needs in providing for safe and efficient air service in the 21<sup>st</sup> century.









Good morning Mr. Smith:

I am providing you with all of the comments received by the Clearinghouse for **MD20120828-0630 - Draft Environmental Impact Statement (EIS): Naval Surface Warfare Center, Dahlgren Division Outdoor Research, Development, Test, and Evaluation Activities**. This concludes the review of this project.

Thanks Sophia

### 1. Maryland Department of Planning:

**C1** - It is Consistent with our plans, programs, and objectives

**C2** - It is **Consistent** with the policies contained in **Executive Order 01.01.1992.27** (Maryland Economic Growth, Resource Protection, and Planning Act of 1992), **Executive Order 01.01.1998.04** (Smart Growth and Neighborhood Conservation Policy), and our plans, programs, and objectives.

**C7** - It is consistent with the requirements of State Finance and Procurement Article 5-7B-02; 03; 04 and 05 Smart Growth and Neighborhood Conservation (Priority Funding Areas).

### 2. Maryland Department of Natural Resources:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

### 3. Maryland Department of the Environment:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

### 4. Charles County:

R2 – See attached

**CONTINGENT UPON CERTAIN ACTIONS:** It is generally **Consistent** with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment(s).

L003.1

### 5. Maryland Department of Transportation:

R1 - As far as can be determined at this time, the subject has no unacceptable impacts on the

Martin O'Malley, Governor  
Anthony G. Brown, Lt. Governor

Richard Eberhart Hall, AICP, Secretary  
Matthew J. Power, Deputy Secretary

plans or programs of the Department of Transportation.

**6. Maryland Historical Trust:**

C3 - No adverse effect on historic properties

**7. St. Mary's County:**

C1 – Note lack of noise Monitoring Locations for the upper LDZ bordering St. Mary's "County" ] L002.1





*Charles County Government*  
**DEPARTMENT OF PLANNING &  
 GROWTH MANAGEMENT**

**CHARLES COUNTY COMMISSIONERS**

Candice Quinn Kelly, *President*  
 Reuben B. Collins, II, Esq., *Vice President*  
 Ken Robinson  
 Debra M. Davis, Esq.  
 Bobby Rucci

Roy E. Hancock  
*Acting County Administrator*

Peter Aluotto, AICP  
*Director*

September 17, 2012

Linda C. Janey, J.D.  
 Assistant Secretary for Clearinghouse & Communications  
 Maryland Department of Planning  
 301 West Preston Street  
 Room 1104  
 Baltimore, MD 21201-2305

Re: MD20120828-0630, Draft EIS, NSWC - Dahlgren

Dear Ms. Janey:

The Department of Planning & Growth Management has submitted the Naval Surface Warfare Center- Dahlgren; Draft Environmental Impact Statement for the Clearinghouse review.

**Amy Blessinger, Community Planning Planner III, PGM** has submitted the following comments: **L004.1**

Please note that some of the increased RTD&E activities of the Proposed Action could potentially have adverse effects on Swan Point, a major waterfront planned community in Charles County. This development seeks to add approximately 1,500 residential units and a mixture of non-residential development. Maryland Board of Public Works approval was granted in May 2008 to construct a 143-slip commercial marina off the southwestern tip of the Weir Creek peninsula in the Potomac River. This marina has the potential to extend a maximum of 1,050 feet into the Potomac River, in close proximity to the Potomac River Test Range boundary. Thus, activities emanating from Dahlgren could cause conflicts due to the future increase in boat traffic in the test range and the proximity of the new marina itself to the test range.

We would also like to call attention to concerns raised by residents of the Potomac River communities of Cobb Island and Swan Point regarding noise, vibration and the addition of night testing.

**L004.2**

If you have any questions regarding this comment, please contact Amy at (301) 645-0650 (ext. 2650), or via email at [BlessingA@charlescounty.org](mailto:BlessingA@charlescounty.org)

Sincerely,

Steven R. Ball, AICP, LEED AP  
 Planning Director

**Your Charles County Connection...**

Planning • Capital Services • Codes, Permits & Inspection Services • Resource & Infrastructure Management

P.O. Box 2150 • 200 Baltimore Street • La Plata, MD 20646 • 301-645-0627 • 301-870-3935

Fax: 301-638-0807 • E-Mail: [PGMadmin@CharlesCounty.org](mailto:PGMadmin@CharlesCounty.org)

Maryland Relay Service: 711 • Relay Service TDD: 1-800-735-2258 • Equal Opportunity County

Visit us online at [www.CharlesCountyMD.gov](http://www.CharlesCountyMD.gov)



-----Original Message-----

From: Gary Whipple [<mailto:Gary.Whipple@stmarysmd.com>]

Sent: Friday, September 28, 2012 3:39 PM

To: dlgr\_nswc\_eis

Subject: ST MARY'S COUNTY REGIONAL AIRPORT

To Whom It May Concern:

Please see attached correspondence that St. Mary's County requests be added to the public record for the Draft EIS for the NSWC Dahlgren Division Outdoor Research, Development, Test and Evaluation Activities. As stated in the letter from the Commissioners of St. Mary's County dated 11 SEP 2012, the County would like to ensure that the proposed action does not impact either current or future availability of instrument approaches and other airspace or operational matters concerning the St. Mary's County Regional Airport (2W6). Per the Airport Master Plan Update that was forwarded with the September 11th letter, the County, in conjunction with the FAA and the Maryland Aviation Administration, is working to achieve an Airport Reference Code (ARC) designation of B-II (large) with a Non-Precision Instrument (NPI) Approach of 1/2 mile for Runway 11, which will be extended by 1,200 feet from its current condition, and an NPI Approach of one (1) mile for Runway 29.

L005.1

Please note that the referenced Airport Master Plan Update is consistent with the County's Comprehensive Plan, per the attached excerpts from Chapter 4, Part 3.1.2.B. The County intends to "encourage development of commuter air travel services and shuttle connections to airports with regional, national and international connections to provide", among other things, a "certified, precision all-weather approach system" for St. Mary's County Regional Airport. (See page 74 of the MAR 03 COMP PLAN doc).

L005.2

Finally, the current Airport Layout Plan (ALP) of AUG 2012 is attached to this E-mail for reference.

L005.3

We trust you understand our position in this matter. If you should have any questions or require additional information, please feel free to contact the undersigned as indicated.

Regards,

Gary B. Whipple, PE  
Engineering Services Division  
Airport Operations Division  
Dept. of Public Works & Transportation  
St. Mary's County, MD  
(301) 863-8400 x 3565  
(301) 863-8810 (fax)



CURRENT ALP - AUG MAR 03 COMP PLAN BOCC ltr - Dahlgren  
2012.PDF (Chap 4 Part 3.1.2.B) DEIS (11 SEP 2012).pdf





ST. MARY'S COUNTY GOVERNMENT  
BOARD OF COUNTY  
COMMISSIONERS



Francis Jack Russell, President  
Lawrence D. Jarboe, Commissioner  
Cynthia L. Jones, Commissioner  
Todd B. Morgan, Commissioner  
Daniel L. Morris, Commissioner

September 11, 2012

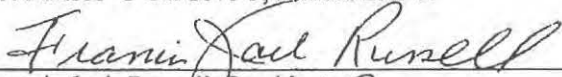
Captain Michael Smith, Commander,  
Naval Surface Warfare Center, Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117

Dear Captain Smith:

St. Mary's County received your notice and copy of the draft Environmental Impact Statement (EIS) for the referenced activities at your installation. The County is hereby forwarding a copy of the St. Mary's County Regional Airport Master Plan Executive Summary for review and incorporation into the final document record. Our Department of Public Works and Transportation staff will be forwarding additional documentation during the public comment period, which we understand expires on October 1, 2012. It is our intent to ensure that the proposed action does not impact either current or future availability of instrument approaches and other airspace or operational matters concerning our Regional Airport.

We look forward to coordinating your proposed action with the County's long-range plans to develop St. Mary's County Regional Airport. Please add our input to the draft EIS text that already includes NAS Patuxent River and Webster Field. If you have any questions, please do not hesitate to contact us.

Sincerely,  
BOARD OF COUNTY COMMISSIONERS  
ST. MARY'S COUNTY, MARYLAND

  
Francis Jack Russell, President

  
Lawrence D. Jarboe, Commissioner

  
Cynthia L. Jones, Commissioner

  
Todd B. Morgan, Commissioner

  
Daniel L. Morris, Commissioner

Enclosure

T: All/Consent/7056

cc: Captain Ted Mills, CO NAS Pax River  
Tom Priscilla, FAA WADO  
Ashish Solanki, A.A.E, MAA  
Airport Advisory Committee ✓

P.O. BOX 653 • CHESAPEAKE BUILDING • 41770 BALDRIDGE ST., LEONARDTOWN, MD 20650  
PHONE 301.475.4200 X1300 • FAX 301.475.4935 • [www.stmarysmd.com](http://www.stmarysmd.com) • [BOCC@STMARYSMD.COM](mailto:BOCC@STMARYSMD.COM)



**CAPT. WALTER FRANCIS DUKE  
REGIONAL AIRPORT AT ST. MARY'S**  
Leonardtown, Maryland



**AIRPORT MASTER PLAN UPDATE**

**FINAL  
AUGUST, 2002  
EXECUTIVE SUMMARY**



**DELTA**  
**AIRPORT CONSULTANTS, INC.**  
*engineers - planners*





## DEPARTMENT OF THE NAVY

NAVAL SURFACE WARFARE CENTER  
DAHLGREN DIVISION  
6149 WELSH ROAD SUITE 203  
DAHLGREN VIRGINIA 22448-5130

IN REPLY REFER TO

5090

Ser CX8/042

14 AUG 2012

From: Commander, Dahlgren Division, Naval Surface Warfare Center

Subj: NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION OUTDOOR  
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION ACTIVITIES  
DRAFT ENVIRONMENT IMPACT STATEMENT

Encl: (1) Outdoor Research, Development, Test and Evaluation  
Activities Draft Environmental Impact Statement

1. Enclosure (1) is an electronic copy of the Draft Environmental Impact Statement (EIS) prepared by the Department of the Navy, Naval Surface Warfare Center, Dahlgren Division (NSWCDD) for your review and comment. The draft EIS evaluates the effects of expanding outdoor research, development, test, and evaluation activities within the Potomac River Test Range and Explosives Experimental Area Complexes, the Mission Area, and Special-Use Airspace at Naval Support Facility Dahlgren.

2. The Navy will conduct three public hearings to receive oral and written comments on the draft EIS. Federal, state, and local agencies, elected officials, and other interested individuals and organizations are invited to be present or represented at the public hearings. Public hearings will be held on:

a. 11 September 2012 at the Newburg Volunteer Rescue Squad and Fire Department, 12245 Rock Point Road, Newburg, MD 20664.

b. 12 September 2012 at the A. T. Johnson Alumni Museum, 18849 Kings Highway, Montross, VA 22520.

c. 13 September 2012 at University of Mary Washington-Dahlgren Campus, 4224 University Drive, King George, VA 22485.

3. All hearings will be held from 6 p.m. to 8 p.m. and will begin with a presentation followed by public comments. All venues are wheelchair accessible. Anyone needing special assistance, such as a sign language interpreter, please contact

Subj: NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION OUTDOOR  
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION ACTIVITIES  
DRAFT ENVIRONMENT IMPACT STATEMENT

the NSWCDD Public Affairs Office at 540-653-8154 or e-mail  
dlgr\_nswc\_eis@navy.mil.

4. Written comments may be submitted at the hearings or mailed  
during the comment period to:

Naval Surface Warfare Center Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117  
Attn: Code C6 Fax: 540-653-4679  
E-mail: dlgr\_nswc\_eis@navy.mil.

5. All written comments must be received by 1 October 2012 to  
ensure they become part of the official record and are assessed  
and considered as part of the final EIS.

6. If you have any questions about the enclosed statement or  
need additional information, please contact the NSWCDD Public  
Affairs Office at 540-653-8154 or e-mail dlgr\_nswc\_eis@navy.mil.

7. Thank you for your participation in the EIS process.



M. H. SMITH

Distribution:  
(See Attached Sheets)



# **QUALITY OF LIFE IN ST. MARY'S COUNTY – A STRATEGY FOR THE 21ST CENTURY –**



**ADOPTED FEBRUARY 19, 2002**

**AMENDED MARCH 24, 2003**

A Comprehensive Plan  
in accordance with  
Article 66B of the  
Annotated Code of Maryland



## **ACKNOWLEDGEMENTS**

### **BOARD OF COUNTY COMMISSIONERS**

Julie B. Randall, President    Joseph F. Anderson    Shelby P. Guazzo  
Thomas A. Mattingly, Sr.    Daniel Raley

### **PLANNING COMMISSION**

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Sue Veith, Environmental Planner    Chad M. Holdsworth, Planner  
Conchita B. Acupanda, Planner    Tina L. Bowles, Office Manager  
Jeffrey D. Edgin, GIS Manager    J. Calvin Strozier, GIS Operator

### **CITIZENS OF ST. MARY'S COUNTY**

## **ATTESTED AND CERTIFIED BY THE PLANNING COMMISSION**

In accordance with §3.07 of Article 66B of the  
Annotated Code of Maryland

---

Frank E. Taylor, Chairman  
December 10, 2001

**BOARD OF COUNTY COMMISSIONERS MISSION STATEMENT**

St. Mary's County Government will:

- be responsive and accountable to the county's citizens;
- provide high quality, cost effective and efficient services;
- preserve the county's environment, heritage and rural character; and
- foster opportunities for present and future generations.

**Authority**

This comprehensive plan has been prepared and adopted pursuant to Article 66B of the Annotated Code of Maryland as amended by the 1992 Economic Growth, Resource Preservation and Planning Act and by the 1997 "Smart Growth" initiatives. Specific elements mandated by the Maryland Code are included herein beginning at the section indicated below.

<u>Element</u>	<u>Plan Reference</u>	<u>66 B Reference</u>
<u>Goals and Objectives</u>	Chapter IV	3.05 (a)(1)(i)
<u>Land Use</u>	Chapter IV, Section 1	3.05 (a)(1)(ii)
<u>Transportation, including provisions for bicycles ways</u>	Chapter IV, Section 3.1.2.B	3.05 (a)(1)(iii)
<u>Community Facilities</u>	Chapter IV, Section 3	3.05 (a)(1)(iv)
<u>Mineral Resources</u>	Chapter IV, Section 2.1.2.B.v	3.05 (a)(1)(v)
<u>Land Development Regulations</u>	Chapter V	3.05 (a)(1)(vi)
<u>Sensitive Areas</u>	Chapter IV, Section 2.2	3.05 (a)(1)(vii) and (viii)
<u>Provisions for Fisheries</u>	Chapter IV, Sections 2.1.2.A.i.c. and 5.3.4	3.05 (a)(5)
<u>Economic Development</u>	Chapter IV, Section 5	3.05 (a)(1):(ii) and (vi)3.
<u>Interjurisdictional Coordination</u>	Chapter IV, Section 6	3.01(b), 3.05(a),3.06(a), 3.07, 3.09

This plan also complies with the Maryland Code by incorporating the eight visions as set forth under Article 66B. The reader will find that the structure of this plan closely follows those visions.

In addition to gleaning guidance directly from Article 66B, this draft plan incorporates concepts, strategies and recommended policies from:

- St. Mary's County Board of County Commissioners;
- St. Mary's County Planning Commission (and its ad hoc Community Character Committee);
- St. Mary's County Board of Appeals;

QUALITY OF LIFE IN ST. MARY'S COUNTY – A STRATEGY FOR THE 21<sup>ST</sup> CENTURY

- County and state Agencies;
- 1974 and 1988 Comprehensive Plans (many concepts and implementation strategies are still valid);
- Relevant legislation (Critical Area Law, Forest Conservation Law, 1997 "Smart Growth" amendments to Article 66B);
- 1988-1995 annual reports of the Planning Commission and Board of County Commissioners;
- Economic Development Commission (1995 Strategic Plan);
- Statewide Tributary Strategies Program (Patuxent and the Lower Potomac Tributary Teams);
- 1979 Patuxent River Policy Plan
- 1996 Patuxent River Watershed Demonstration Project;
- Sensitive Areas Plan Element and Mapping (1994 and 1995 Coastal Zone Management grant efforts);
- Southern Maryland Heritage Plan (endorsed by the Board of County Commissioners in October 1996);
- Findings and recommendations of the 1996 Wicomico Scenic River Countryside Stewardship Exchange.

Specific and general input was received from county citizens by the listed commissions and was solicited directly by the Department of Planning and Zoning through the use of surveys, questionnaires and at workshops, citizen information forums, and during presentations to numerous citizen organizations





## Executive Summary

### *A COMMUNITY VISION:*

Preserve and enhance the quality of life by recognizing and protecting the unique character of St. Mary's County as a rural Chesapeake Bay peninsula. Foster economic growth and create an atmosphere of excellence by focusing and managing growth to create vibrant, attractive communities, by protecting the rural character and economy of the countryside, by nurturing the shoreline and adjacent waters and by preserving and capitalizing on the other natural resources and historical quality of the county.

This plan has been prepared in response to the interest of the residents of St. Mary's County in achieving this vision. It also satisfies legal requirements of Article 66B of the Annotated Code of Maryland as amended to include, among other things, the 1992 Economic Growth, Resource Protection and Planning Act and the various components of Maryland's "Smart Growth, initiatives. It continues and strengthens those goals and objectives of its 1988 and 1999 predecessors insofar as they remain valued by the citizens of St. Mary's County as they contribute to achieving its community vision.

Citizen input and public opinion played a large role in the planning process. For the most part the opinions given reinforce what was stated or suggested in 1994 at a "visual preference" workshop. In response to a citizen survey, some of the responses given to the question "What issues do you believe should be addressed in the comprehensive plan?" included: maintaining rural character, clustering growth, aesthetics, more focus on people less on cars, agricultural land preservation, breaking up of farmland and open space, and transferable development rights (TDRs). Many of these issues were repeated under a separate survey question which asked citizens to rate the quality of services in the county. Transportation, agricultural preservation, and rural preservation all received a high number of poor ratings.

The county has been successful in directing the majority of new high-density residential and nonresidential development to the designated development districts, but increased efforts toward directing other types of development there is needed. Some strides toward land preservation have been made, but significant protection of farmlands as an economic component of rural character has *not* occurred. Application of the implementation strategies of the 1999 Plan, particularly the establishment of density in the Rural Preservation District at one dwelling unit per three acres, has shown that they have not achieved and are probably incapable of achieving the goal of preservation of open space. Protection of land for agriculture and resource utilization will not occur without additional strategies to guide how that density is located, how it functions and "looks" in the landscape.

Major expenditures on capital facilities since 1999 have been concentrated in designated growth areas. However, designated growth areas are larger than projected development needs dictate, and the 1999 plan provided little or no guidance for sequencing improvements and services within those areas. It did suggest some reduction of these development areas based on the mandated sensitive area considerations and on the projected "build out" needed to accommodate new growth.

This plan proposes several "win-win" initiatives intended to guide growth and to preserve natural, cultural and economic characteristics of value to the community's citizens, while attempting to equitably assess the cost of growth against the benefit. The plan also proposes to address the equity value inherent in landowners' holdings by providing economic options to

preserve natural areas and lands of high productive value. The plan directs citizen and government action within the context of the community vision and within the context of the visions of the state legislation (Article 66B): 1. Development is concentrated in suitable areas. 2. In rural areas growth is directed to existing population centers and resource areas are protected. 3. Sensitive areas are protected. 4. Stewardship of the Chesapeake Bay and the land is a universal ethic. 5. Conservation of resources, including a reduction in resource consumption is practiced. 6. Economic growth is encouraged and regulatory mechanisms are streamlined. 7. Adequate public facilities and infrastructure under the control of the county are available or planned in areas where growth is to occur. 8. Funding is available to achieve these Visions.

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<b>1. Development is concentrated in suitable areas .....</b>	<b>31</b>
1.1 The amount of new residential growth that has occurred in the rural planning area is reduced by one-half. About 80% of the county land area is in rural preserve and 20% in designated growth centers. Between 1990 and 1996, 56% of new residential development occurred outside of designated growth centers. A one-half reduction would still allow for 28% of new development to be in the rural preserve. ....	31
1.2 New residential and employment growth is internally and externally integrated, creating neighborhoods and communities rather than a predominant land use pattern of subdivisions and strip retail or office plazas. ....	31
1.3 Individual property access is denied on major thoroughfares, especially Three Notch Road (MD 5/235) and Point Lookout Road (MD 5), where access is limited to collector roads. Collector roads are interconnected for safety, reduction of congestion during peak period, and for additional business access. Road improvement priorities have resulted in new and improved road links to the growth centers. ....	31
1.4 Growth boundaries are determined through balanced analysis of sensitive areas, build out potential of available lands, population and employment demands, and efficient utilization of public services and resources. ....	31
1.5 Attention to architectural standards and urban design compatibility is accommodated as expected by the community. ....	31
<b>2. In rural areas, growth is directed to existing population centers and resource areas are protected .....</b>	<b>31</b>
2.1 Farms and forest resources are preserved from urban or suburban encroachment and the rural character and attributes of the county are maintained and enhanced. Landowner equity and property values have been enhanced by an active program of purchase and .....	31
2.1 transfer of development rights. ....	32
2.2 Protection of the rural countryside and traditional economies and activities – fishing, farming, forestry – are recognized as important components of the community and rural character. This rural character is worth maintaining not only for its	

	scenic beauty, but because of its attraction as a setting for technology and service industries which are logically concentrated near the Patuxent River Naval Air Station. ....	32
<b>3.</b>	<b>Sensitive areas are protected .....</b>	<b>32</b>
3.1	Land and natural features important to maintaining the environmental health of the county, which present constraints for development, and which are critical to reducing damage to the Chesapeake Bay, are preserved from disturbance and enhanced to increase the effectiveness of their benefits for erosion control, filtering of sediments and nutrients and provision of essential habitat for wildlife. In return, citizens receive benefits of reduced construction costs, minimization of erosion and flood events, and improved water quality for drinking and recreation, and increased property values for a more scenic living environment. ....	32
3.2	Historic and cultural landmarks are preserved, enhanced and made accessible .....	32
3.3	A coordinated cross-county network of greenways and scenic easements is established and waterfront access is enhanced to provide for passive and active recreation and an enhanced natural environment. ....	32
3.4	Large contiguous tracts of sensitive areas are outside of designated growth areas and zoned for rural or resource protection. Specifically, the McIntosh Run natural heritage area is excluded from the Leonardtown development district, and the St. Mary's watershed natural area and lands westward thereof are excluded from the Lexington Park development district. ....	32
<b>4.</b>	<b>Stewardship of the Chesapeake Bay and the land is a universal ethic .....</b>	<b>32</b>
4.1	Infrastructure is planned to provide for controlled concentrated growth. The county responsibly assesses the impacts of all projects and proposals against environmental or infrastructure capacities. Excessively paved roads and expansive, under utilized parking lots are no longer allowed. ....	32
4.2	Ecosystems are protected, preserved, and enhanced by independent actions of individual citizens. ....	32
4.3	The county receives support, praise, and encouragement from outside of the community as a result of successful public education and outreach efforts and citizen participation campaigns that incorporate the community's values. ....	32
<b>5.</b>	<b>Conservation of resources, including a reduction in resource consumption, is practiced. ....</b>	<b>32</b>
5.1	Existing communities are revitalized. New businesses are encouraged to reuse existing structures, or construct new infill buildings in order to utilize existing infrastructure, and bring new activity into declining areas. Owners of existing structures are encouraged to maintain and retrofit the buildings and grounds to be made attractive and energy efficient. Dilapidated or unsafe buildings are renovated for adaptive reuse and made safe and secure or removed. Illegal junkyards and other blighting influences are removed or brought into compliance with applicable regulations and ordinances. ....	32
5.2	Businesses, industries and individuals reduce consumption, and recycle or reuse materials. Demand for recycled products is encouraged by establishing goals for utilizing recycled products in the public sector. ....	32
5.3	Building codes and ordinances require energy and resource efficient construction materials and methods such as use of low flow plumbing fixtures for renovation and new construction, energy efficient insulation and windows and energy efficient heat, air conditioning and appliances. ....	33
5.4	New development is clustered to preserve rural lands and open space land uses. ....	33
<b>6.</b>	<b>Economic growth is encouraged and regulatory mechanisms are streamlined .....</b>	<b>33</b>
6.1	Tourism development and broadened economic opportunity are closely linked to historic, cultural and environmental resources. ....	33
6.2	Permits and inspections are required only where necessary to uphold local zoning and building codes, which are adopted only when required to implement valid adopted public policy. Overly restrictive, inflexible, and redundant regulation has been eliminated. ....	33
6.3	Infill development on existing developed tracts is encouraged, and preservation and protection of remaining environmental features on sites is rewarded through regulatory streamlining, which supports goals for focused growth, economic development and reduction of consumption of resources through revitalizing existing developed areas. ....	33
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## Introduction

This growth opportunity plan is about the county's past almost as much as it is about its future. It is about where we have come from as a community of people and what that means for where we are to go as new growth pressures us toward an increasingly (sub)urban future. St. Mary's County celebrated its 366<sup>th</sup> birthday and Lexington Park its 57<sup>th</sup> birthday at the turn of the century. What do the next five, ten, 20 or even 50 years hold for us, our children, and grandchildren? Will we be able to preserve those things of value that new and long time residents alike cherish about St. Mary's County? This plan describes a desired future and charts a realistic and viable means of reaching it. Planning is and plans are more than trying to predict a future land use pattern; the effort at hand is to assess the quality of our living environment and to fashion policy that will preserve and enhance the quality of life for current and future residents, workers, and visitors.

The county's first county commissioner adopted plan in 1974 was largely unchanged until a new plan was adopted in 1988. All counties and municipalities then updated and revised their plans as necessary to conform to the requirements of the Economic Growth, Resource Protection, and Planning Act (hereafter "The Planning Act") enacted in 1992 by the Maryland Legislature and subsequently incorporated into Article 66B of the Annotated Code of Maryland. In 1999 the county commissioners adopted a comprehensive plan to build upon the successes and positive components of the 1988 plan and to revise provisions which did not fulfill the specified requirements. This plan has been prepared to continue such building and to comply with further updates of state legislation, including "Smart Growth" initiatives.

State legislation prescribes eight visions of Smart Growth: 1. Development is concentrated in suitable areas. 2. In rural areas growth is directed to existing population centers and resource areas are protected. 3. Sensitive areas are protected. 4. Stewardship of the Chesapeake Bay and the land is a universal ethic. 5. Conservation of resources, including a reduction in resource consumption is practiced. 6. Economic growth is encouraged and regulatory mechanisms are streamlined; and 7. Adequate public facilities and infrastructure under the control of the county are available or planned in areas where growth is to occur. 8. Funding is available to achieve these VISIONS. This plan also complies with state legislated requirements to 1) identify sensitive areas and develop programs to ensure the protection of the natural environment as a plan element 2) ensure interjurisdictional cooperation and coordination of various programs, and 3) provide for forest conservation, mineral resource management and fishery operations, administrative amendments, adaptive reuse, etc.

A comprehensive plan is not just a land use analysis and projection, but also deals with many issues which affect quality of life in the community, such as water supply, traffic congestion, and education. In addressing such diverse topics, any one document would gloss over important concepts; therefore, many other functional and geographic plans must be and are coordinated with the overall comprehensive plan. A comprehensive water and sewerage plan directs the provision of these public facilities, while a solid waste management plan advises public policy on matters of trash disposal. The county commissioners have adopted a Land Preservation and Recreation Plan, a Wicomico Scenic River Management Plan, an Airport Master Plan, and a School Facilities Master Plan. Several geographic plans are under review or in preparation, such as the Lexington Park-Tulagi Place Master Plan, and watershed management plans for the St. Mary's River and McIntosh Run. Tributary strategies are emerging throughout the Chesapeake watershed, and in this effort St. Mary's County is participating in the preparation of strategies for the Lower Potomac, the Lower Western Shore, and the Patuxent River. The county has endorsed the 1996 Southern Maryland Heritage Plan.

This plan is more than a statement of the county's public policy. It is a plan for the involvement of the community in charting that public policy. The participation of the public and the expression of citizen perceptions about the condition of the county has been crucial component of the planning process used to develop this plan. The St. Mary's County Planning

Commission and the Department of Planning and Zoning conducted numerous workshops and public presentations aimed at eliciting response from diverse groups within the community about their visions for the future and assessment of the past. The assessments and sentiments of the participants in these activities form the basis for the recommendations contained in this plan.

While citizens are the most diverse participants in the planning process, the county commissioners, planning commission, other boards and commissions, consultants, staff, other jurisdictions including the State of Maryland and the Town of Leonardtown all have roles in the planning process and in the plan itself. Implementation of the policies expressed herein requires support from and actions by all of the participants. Importantly too, assessment of success in achieving the expressed vision of the plan will fall to the participants as well. If we don't track our progress and redirect as necessary, the attainment of our community vision may never be realized. The attainment of the *Community Vision* is the objective of this plan.



*Map: Lexington Park Development District*

Development District Concept Plan

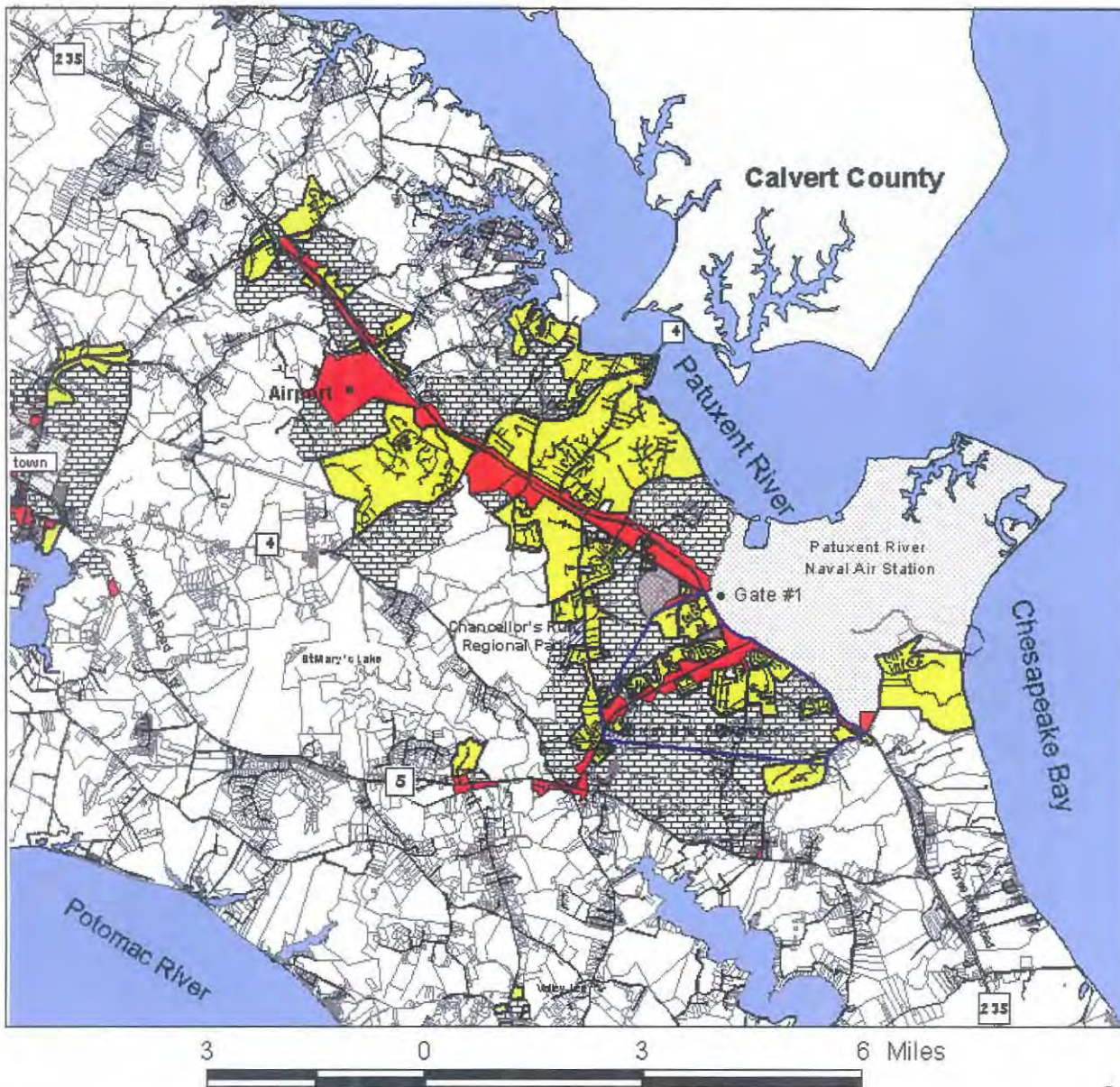
## Lexington Park



Quality of Life in St. Mary's County  
A Strategy for the 21st Century

### LEGEND:

- Commercial/Industrial
- Public/Semi-Public
- Growth Areas
- Residential
- Employment Centers
- Property Lines
- Roads
- Lex. Park Rev. Dist.



Prepared By: The Department of Planning & Zoning.



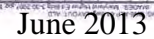
- B. Policy: Develop and maintain a TRANSPORTATION SYSTEM that is well integrated into the community fabric and that supports the land use concept.
- i. Provide safe, efficient, economical ROADS designed to address goals for community revitalization, economic development, and environmental stewardship.
    - a. Develop and implement transportation plans and road standards that support and promote resource protection, environmental and community character preservation, and cost containment goals.
      - i) Develop road and parking standards which reduce land consumed by roads and their rights of way (ROW) consistent with accepted national standards; preserve natural environmental features; reasonably manage the public ROWs and secure reasonable compensation for the use of these ROWs by telecommunications providers and other ROW users; maintain and promote rural and community character; reduce stormwater runoff; reduce construction costs; and which reduce repair and maintenance costs.
        - a) Evaluate new roads and road improvements to ensure they do not adversely impact cultural, historical and environmental features and character of an area.
        - b) In residential and rural areas reduce pavement and rights-of-way width requirements through reduced residential area design speeds, reduced on-street parking accommodation in low density residential areas, sharing of road and utility ROW ("shared easements" as described in the federal "Telecommunications Act of 1996").
        - c) In the commercial core areas and higher density residential areas promote on-street parking and reduction of travel lane widths, provision of sidewalks and street tree plantings.
        - d) Require vehicular and pedestrian connection between adjacent parking areas at the time of infill or redevelopment activities. Allow overall reduction of parking ratios based on use and capacity to share spaces.
    - b. Effect improvements and additions to the road network to correspond to and support the infrastructure needs in growth areas; to ensure adequate highway and road system capacity; to provide planned level of service for existing and proposed land uses; and to address adequate facilities outside the growth areas.
      - i) Evaluate adequate capacity based on cumulative impact of all approved development activity.
      - ii) Establish desired level of service and minimum safety

- requirements for county and state roads based on comprehensive land use and growth management goals.
- iii) Ensure that the density or intensity of permitted development is supportable by the planned road network prior to approval of development activities.
- iv) Improve safety, traffic flow and aesthetics along primary routes in St Mary's County.
- ii. Encourage development and utilization of ALTERNATIVE TRANSPORTATION in the county.
  - a. Foster an efficient, safe intermodal transportation system which includes routes and facilities to accommodate automobiles, bicycles, pedestrians and mass transit for residents, commuters and visitors.
    - i) Encourage a transportation network that provides alternative means and methods of travel.
      - a) Provide sidewalks, walking paths, and bike paths and lanes as requirements of road systems and to connect other public and private sites (e.g. school, libraries, parks and hospitals) in all development projects. Participate with the SHA sidewalk retrofit program. Provide minimum standards and incentives for these amenities.
      - b) Provide and promote the use of park and ride facilities and mass transit for those commuting into, out of, and within the county.
        - promote carpooling and ridesharing
      - c) Expand bus service to regional and metropolitan destinations
      - d) Establish and maintain right of way for future light rail extension from Waldorf to Lexington Park.
      - e) Encourage development of commuter air travel services and shuttle connections to airports with regional, national and international connections to provide:
        - Certified, precision all-weather approach system;
        - Passenger terminal with on-site car rental facility;
        - Regular commuter airline service to Baltimore, Washington and/or Dulles; and
        - Modest private commuter/corporate jet capacity.
      - f) Promote transportation alternatives that serve

economic development goals for encouraging tourism, such as ferry service including hovercraft, to Eastern Shore, designation and expansion of bike routes, expansion of transient boating facilities.

- ii) Manage demand for direct access to major roads.
  - a) In growth areas, create local traffic roads parallel to but well back from arterial routes to combat strip development patterns by providing visible and accessible commercial and residential frontage, and to reduce local traffic impact on peak traffic flow on arterial roads.
    - Construct FDR Boulevard
    - Provide connections between multiple access points to new major subdivisions.
  - b) Designate St. Andrews Church Road (MD 4) Point Lookout Road (MD 5) Budd's Creek Road (MD 234) and Three Notch Road (MD 235) as restricted access traffic arteries.
  - c) Require vehicular and pedestrian interconnection between adjacent parking lots and subdivisions to reduce the need to travel on primary and collector roads.
  - d) Require joint use access driveways for ingress/egress to contiguous properties.
  - e) Require access driveway consolidation to reduce the existing number of ingress and egress points.







**NON-GOVERNMENT ORGANIZATION  
COMMENTS**

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ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING

Complete TRANSCRIPT of all the public speakers

taken in the public hearing held on September 11, 2012, at  
the Newburg Volunteer Rescue Squad, 12245 Rock Point Road,  
Newburg, Maryland, at 6:00 p.m.

Reported by: Cherryl J. Maddox

**MADDOX REPORTING SERVICE, INC.**  
Registered Professional Reporter  
684 Burnt House Point  
Colonial Beach, Virginia 22443  
(540) 372-6874  
(804) 224-7275

1 September 11, 2012

2 MODERATOR ANN SWOPE: Now we are moving  
3 to the hearing portion of our meeting. We will be  
4 taking your oral comments on the Draft EIS. We  
5 want your comments to insure that we thoroughly  
6 considered your inputs in our decision.

7 Your comments will be recorded  
8 for the public record. There is an official  
9 recorder present, who will record your oral  
10 comments and prepare a transcript.

11 We won't be responding to  
12 questions tonight, however substantial comments  
13 will be addressed in the final EIS. If you would  
14 like to speak and haven't signed up yet, you may  
15 do so at the sign up table right now or at any  
16 time while we are open to comment.

17 So, if you later feel you  
18 would like to make an additional oral comment, you  
19 may sign up to speak again. Each speaker will be  
20 allowed two minutes. We have a time keeper with a  
21 clock, it is located at this table up front. The  
22 clock will count down and sound an alarm when your  
23 time is up. If you have not finished your



1 comment, I can give you your text and we will, on  
2 a comment form, and it will be included in the  
3 public record.

4 As an alternative to  
5 publically stating your comment, you may dictate  
6 your comment to the official recorder in private  
7 after the public oral comments conclude. Please  
8 sign up at the table for private dictation.

9 Additionally, we welcome your  
10 written comments during or after the meeting.  
11 Comment forms are also available at the welcome  
12 table and can be deposited in the blue box right  
13 here on the comment table. To submit written  
14 comments after the meeting, please take a public  
15 hearing information sheet with you. You should  
16 have been provided one when you came in. There  
17 are also more we can give you on the way out.  
18 They provide our e-mail, our fax, and our mailing  
19 addresses. I remind you that your comments need  
20 to be post marked by October 1, 2012.

21 We will now take speakers in  
22 the order from the speaker sign up list. As I  
23 call your name, please come to the microphone and

1 state your name and any organization affiliation  
2 that you have.

3 Charlotte Simpson.

4 MS. SIMPSON: Hi, my name is Charlotte  
5 Simpson, I am coordinator of Neighborhood Crime  
6 Watch and Citizens on Patrol. I am also  
7 representative, it looks like tonight, of Citizen,  
8 the Cobb Island Citizens Association.

9 My comments are my own,  
10 though. I'm concerned about the noise and  
11 vibration. I live on Cobb Island. I live on the  
12 Wicomico side, but I have relatives on the Potomac  
13 side also. About a year ago, we had a day at  
14 hell. And you all did address it at our Citizen's  
15 Association. We thought we were being bombed. We  
16 thought we had missed the evacuation. You  
17 temporarily put up a sound and vibration monitor  
18 down on the island when you were testing for a  
19 couple of weeks. I would like to see one down  
20 there full time. That is what we are concerned  
21 about, this happening again if we have increase --  
22 I am reading on the impact statement that it could  
23 be tested at night. I object to that. I think we

1 all do. We need our sleep. And I would really,  
2 really, like a monitor down there so you know it  
3 is happening. I know you do the weather, take  
4 everything into account, and I fully support you,  
5 I really do, but we have to live there. So, and I  
6 know that you will come down and look at cracked  
7 windows, broken stuff, but you know, I have never  
8 heard of you paying anything either.

9 But that incident, we had  
10 things fall off walls and break, and this happens,  
11 vibration happens like that all of the time. If  
12 it is increased, it will greatly increase our  
13 quality of life. I would like to see the monitor  
14 and the noise addressed. Thank you.

15 MODERATOR ANN SWOPE: Thank you.

16 That is the only name we had  
17 on the list but maybe she generated your thoughts  
18 for more comments, so I will give you a couple of  
19 minutes if you have something you would like to  
20 say.

21 MR. ELWOOD: My name is Bob Elwood, I'm  
22 with the Potomac River Association and thank you  
23 for including us on your list and sending us the

1 EIS. I actually have questions but I'm not  
2 hearing how we deal with questions, but I can  
3 rephrase them or you can tell me how the questions  
4 are asked.

5 MODERATOR ANN SWOPE: You can actually  
6 ask the question here and it will be answered in  
7 the final EIS.

NG0001.1

8 MR. ELWOOD: Are biological strains  
9 identifiable as coming genetically, identifiable  
10 as coming from Dahlgren, if that became an issue  
11 and need to identify where it came from. Can we  
12 differentiate naturally occurring basil lights  
13 from the released versions, is the question.

14 And the, there was a statement  
15 of no significant impact. On the draft EIS, there  
16 was a reference to negligible impacts, and my  
17 question is, what's the difference between no  
18 significant -- is there a difference between no  
19 significant impact and a negligible impact. And  
20 the related question was, in analyzing  
21 environmental impact statements, has a whole lot  
22 of negligible impacts ever become a significant  
23 impact? And that's all I have. Thank you.

NG0001.2



1 MODERATOR ANN SWOPE: Thank you. Are  
2 there any additional oral comments?

3 Norman Closta.

4 MR. CLOSTA: Okay, and as stated, my  
5 name is Norman Closta. I'm the board president of  
6 the Swan Point Property Owners Association here  
7 across the river from Dahlgren, and like the  
8 previous speaker, I would like to form some  
9 comments in the terms of questions.

10 One of the things I have got a  
11 question is going from a baseline to alternative  
12 one to alternative two, you are talking about a  
13 horizon of 27 years, I'm sorry, 15 years going  
14 down to 2027. What's not clear to me is what is  
15 the budget assumptions you are making with respect  
16 to the Defense Department budget and the ability  
17 to get that kind of comings to handle these kinds  
18 of scenarios that you are talking about, which  
19 alternative two you are talking about a 16 percent  
20 increase over the alternative one, and baseline  
21 combined. So, I would like to find out what  
22 assumptions you are make in terms of the budget.

23 Also, the question about the

1 biological and chemical testing, it's not clear as  
2 to why Ben Gay like products can stimulate and  
3 simulate toxins, and how we make that  
4 extrapolation, and what is the worth of doing  
5 these kind of testing when there is no known link  
6 up that is at least presented in the system.

7 And also, looking at my **NG0002.2**  
8 questions here, again it is assumptions. You  
9 check with various program managers on future **NG0002.3**  
10 requirements, so the requirements analysis are  
11 based upon what? Is this based upon a threat  
12 analysis or is it just program managers both  
13 within Dahlgren itself or scattered throughout the  
14 Defense Department who you support, is it based  
15 upon threats or is it based upon wishful thinking?  
16 And that's an important thing to understand as the  
17 basis for developing these alternatives, because  
18 there is a lot of money tied up in these things  
19 and also it goes back to the comment that you **NG0002.4**  
20 heard first about what's the basis for doing night  
21 testing and bad weather testing? It's not clear  
22 exactly what that is. Thank you.

23 MODERATOR ANN SWOPE: Thank you. Are

there any additional oral commenters from those who have spoken already or those who have not spoken? You are both eligible to come back to the podium.

(no response from the audience)

MR. CLOSTA: We can still submit written comments by the dead line?

MODERATOR ANN SWOPE: Absolutely.

This then concludes our public oral comment portion of the evening. You may provide oral comments in private as soon as I leave the podium. We will have you a separate room to do that, and I remind you that you may provide written comments while you are here or after you leave. You just need to make sure you get them postmarked by October 1. And we all at Naval Service Warfare Center Dahlgren Division Naval Support Activities South Potomac, thank you for your interest in our Draft and Environmental Impact Statement. Thank you.

HEARING CONCLUDED AT 6:50 P.M.

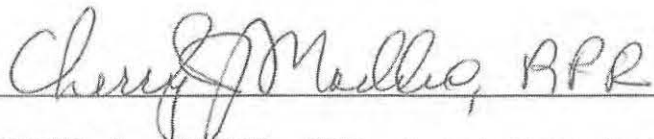
## 1 CERTIFICATE OF COURT REPORTER

2 I, Cherryl J. Maddox, hereby certify that I was the  
3 Court Reporter in the hearings, held in Newburg Volunteer  
4 Rescue Squad, 12245 Rock Point Road, Newburg, Maryland, on  
5 September 11, 2012, at the time of the hearing herein.

6 I further certify that the foregoing transcript is a  
7 true and accurate record of the hearing herein.

8 Given under my hand this 8th day of October, 2012.

9  
10  
11

12   
13 CHERRYL J. MADDOX, RPR, Court Reporter

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23



**PUBLIC  
COMMENTS**

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-----Original Message-----

From: Philip Lehman [<mailto:plehman47@verizon.net>]

Sent: Tuesday, August 21, 2012 12:15 PM

To: dlgr\_nswc\_eis

Subject: DEIS document

Thanks (I think) for the DEIS CD. Comprehensive and informative. The only thing I would have liked to have seen discussed was NSW's safety record over perhaps the past 5-10 years as it relates to range activities: noise complaints, structural damage, wildlife and human illnesses/injuries/deaths related to release of simulants, EM, laser or ordinance - both worker and non-employee (community) related. I know it is not a part of the EIS but as a concerned citizen it would be useful to know that NSW has a great, good or bad safety record before I support an increase in range activity.

I used to fly fighters for the Air National Guard and whenever we wanted to increase or applied to continue existing air-to-air or air- to-ground range activity we were always compelled to demonstrate the number and location of any untoward events (supersonic flights, noise complaints, off range releases, etc) and what actions we had taken to preclude repeat incidents.

Phil Lehman, DVM  
King George, VA

POOI.1

-----Original Message-----

From: usacitizen1 usacitizen1 [<mailto:usacitizen1@live.com>]

Sent: Saturday, August 25, 2012 3:00 PM

To: dlgr\_nswc\_eis; [humanelines@hsus.org](mailto:humanelines@hsus.org); [info@peta.org](mailto:info@peta.org); [info@idausa.org](mailto:info@idausa.org); [foe@foe.org](mailto:foe@foe.org)

Cc: [info@emagazine.com](mailto:info@emagazine.com); [info@oceana.org](mailto:info@oceana.org); [info@opsociety.org](mailto:info@opsociety.org); [info@pewtrusts.org](mailto:info@pewtrusts.org); [info@seashepherd.org](mailto:info@seashepherd.org)

Subject: PUBLIC COMMENT ON FEDERAL REGISTER FW: THIS ALLEGED  
"RESEARCH"

KILLS WHALES, DOLPHINS, ALL MARINE LIFE - US NAVY DOESNT CARE - IT JUST  
KILLS THEM MAKING EARTH POORER

THERE SHOULD BE NO GROWTH IN DESTRUCTION CAUSED BY THE NAVY. THE  
DESTRUCTION THEY ALREADY CAUSE IN AMERICA IS DISGUSTING AND DEPRAVED.  
THEY SHOULD BE TRAINING IN AMERICA WITHOUT HURTING THE ENVIRONMENT.  
LET THEM GO TO THE COUNTRIES WE ARE AT WAR WITH TO DESTROY, NOT  
HERE IN AMERICA, THEIR OWN COUNTRY. IT IS TIME TO SHUT DOWN THE  
PERPETUAL WARS AMERICA IS IN. WE NEED TO BE OUT OF WAR FOR A WHILE.  
OUR GOVT WANTS US TO BE IN PERPETUAL WAR. SUCH WARS ARE SENDIGN THIS  
COUNTRY INTO OBLIVION. THE FISH AND TURTLES DIDN'T CAUSE ANY WAR -  
WHY ARE YOU BOMBING THEM? THIS KILLING HAS TO STOP. THERE IS NO  
JUSTIFICATION FOR IT. THIS COMMENT IS FOR THE PUBLIC RECORD. JEAN PUBLIC

P002.1

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[Federal Register Volume 77, Number 165 (Friday, August 24, 2012)] [Notices]  
[Pages 51528-51530] From the Federal Register Online via the Government  
Printing Office [[www.gpo.gov](http://www.gpo.gov) <<http://www.gpo.gov/>> ] [FR Doc No: 2012-20937]

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DEPARTMENT OF DEFENSE

Department of the Navy



Notice of Public Hearings for the Draft Environmental Impact Statement for  
Outdoor Research, Development, Test and Evaluation Activities, Naval Surface  
Warfare Center, Dahlgren Division, Dahlgren, VA

AGENCY: Department of the Navy, DoD.

ACTION: Notice.

---

SUMMARY: Pursuant to Section (102)(2)(c) of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (Title 40 Code of Federal Regulations Parts 1500-1508), the Department of the Navy (DoN) has prepared and filed with the U.S. Environmental Protection Agency a Draft Environmental Impact Statement (EIS) to evaluate the potential environmental effects of expanding Naval Surface Warfare Center, Dahlgren Division's (NSWCDD) research, development, test and evaluation (RDT&E) activities within the Potomac River Test Range (PRTR) complex, Explosives Experimental Area (EEA) Range complex, the Mission Area, and Special-Use Airspace (SUA) located at Naval Support Facility (NSF) Dahlgren, Dahlgren, VA.

The DoN will conduct three public hearings to receive oral and written comments on the Draft EIS. Federal, state, and local agencies, elected officials, and other interested individuals and organizations are invited to be present or represented at the public hearings. This notice announces the dates and locations of the public hearings for this Draft EIS.

DATES AND ADDRESSES: Public hearings will be held on the following dates and locations:

1. September 11, 2012 at the Newburg Volunteer Rescue Squad and Fire Department, 12245 Rock Point Road, Newburg, MD 20664;
2. September 12, 2012 at the A.T. Johnson Alumni Museum, 18849 Kings Highway, Montross, VA 22520; and
3. September 13, 2012 at the Mary Washington University-Dahlgren Campus,

4224 University Drive, King George, VA 22485.

All meetings will be held from 6:00 p.m. to 8:00 p.m. and will begin with a presentation followed by a public comment period.

FOR FURTHER INFORMATION CONTACT: Commander, Naval Surface Warfare Center

Dahlgren Division, 6149 Welsh Road, Suite 203, Dahlgren, VA 22448-5130,

Attn: Code C6 (NSWCDD PAO), Fax: 1-540-653-4679, Email:

[DLGR\\_NSWC\\_EIS@NAVY.MIL](mailto:DLGR_NSWC_EIS@NAVY.MIL), Phone: 1-540-653-8154, or Web site:

<http://www.navsea.navy.mil/nswc/dahlgren/EIS/index.aspx>.

SUPPLEMENTARY INFORMATION: A Notice of Intent to prepare the NSWCDD Outdoor

RDT&E Activities Draft EIS was published in the Federal Register on June 18, 2007 (72 FR 33456-33457). Five public scoping meetings were held on the following dates and locations:

1. July 23, 2007, Shiloh Baptist Church, 13457 Kings Highway, King George, VA 22485;
2. July 24, 2007, Christ Episcopal Church, 37497 Zach Fowler Road, Chaptico, MD 20621;
3. July 25, 2007, La Plata Volunteer Fire Department, 911 Washington Avenue, La Plata, MD 20646;
4. July 30, 2007, Saint Mary's Episcopal Church, 203 Dennison Street, Colonial Beach, VA 22443; and
5. July 31, 2007, Callao Rescue Squad Hall, 1348 Northumberland Highway, Callao, VA 22435.

The proposed action is to expand NSWCDD's RDT&E capabilities within the PRTR Complex, the EEA Range Complex, Mission Area, and SUA. These RDT&E activities include outdoor operations that require the use of ordnance, high-power electromagnetic (EM) energy, high-energy (HE) lasers, and chemical and biological simulants (non-toxic substances used to mimic dangerous agents). Under the proposed action, the average number of events that could take place annually (with the exception of large-caliber gun firing events) would increase above current baseline levels. To ensure that equipment and materials work effectively, even in less-than-ideal conditions, some activities would take place under conditions in which

activities are now rarely/never conducted, such as at dusk, dawn, and night and in adverse weather.

The purpose of the proposed action is to enable NSWCCD to meet current and future mission-related warfare and force-protection requirements by providing RDT&E of surface ship combat systems, ordnance, HE lasers and directed-energy systems, force-level warfare, and homeland and force protection.

The need for the proposed action is to enable the DoN and other stakeholders to successfully meet current and future national and global defense challenges required under 10 U.S.C. 5062 (2006) by developing a robust capability to carry out assigned RDT&E activities within the PRTR and EEA Range Complexes,

[[Page 51529]]

the Mission Area, and the SUA at NSF Dahlgren.

NSWCCD evaluated a range of alternatives that would meet action objectives, and applied screening criteria to identify those alternatives that were "reasonable" (i.e., practical and feasible).

Reasonable alternatives were carried through the Draft EIS analysis.

Screening criteria included:

1. Criterion 1--accommodate historical and current, baseline RDT&E mission requirements for activities that have the potential to affect human health and/or the environment; namely, those involving ordnance, the use of high-power EM energy, HE lasers, chemical simulants, and the use of the PRTR;
2. Criterion 2--accommodate known future requirements, which include the use of biological simulants alone;
3. Criterion 3--accommodate optimal potential future requirements by incorporating a margin of growth for the most actively evolving programs for which it is difficult to accurately forecast future needs, and include mixtures of biological and chemical simulants; and
4. Criterion 4--minimize impacts to commercial and recreational use of the Potomac River.

Reasonable alternatives were carried through the Draft EIS analysis. The Draft EIS considers three alternatives as summarized below:



1. No Action Alternative--maintains current operations and provides a baseline against which to measure the impacts of the other two alternatives.

2. Alternative 1--includes No Action Alternative plus growth above No Action Alternative levels necessary to meet RDT&E mission requirements in the near future.

3. Alternative 2--Provides for roughly 15% growth in activity levels above that of Alternative 1 to provide a margin of growth for the most actively evolving programs. It addresses current baseline requirements, known future requirements, and projected increases in the foreseeable future based on current trends. This alternative is the Preferred Alternative.

Alternatives 1 and 2 constitute increases in current activities of small-arms firing, detonations, high-power EM energy events, HE laser events, chemical and biological simulant (defense) events, and PRTR hours of use.

Alternative 2 (Preferred Alternative) satisfies current baseline requirements, includes the growth necessary to meet known RDT&E mission requirements for the near future and includes a margin of growth for the most actively evolving programs, namely those for which the numbers of future annual test events, firings, and hours of use are harder to predict because of the uncertainties inherent in carrying out RDT&E.

The Draft EIS evaluates the potential environmental effects associated with NSWCCD's outdoor RDT&E activities. Alternatives were evaluated within resource areas including land use and plans, coastal zone resources, socioeconomics, environmental justice communities, protection of children, utilities, air quality, noise levels, cultural resources, hazardous materials and hazardous waste, health and safety, geology, topography, soils and sediments, water resources, and aquatic and terrestrial biological resources. The analysis includes an evaluation of the direct, indirect, and cumulative impacts. Methods to reduce or minimize impacts to affected resources are addressed.

The DoN has made a preliminary finding that for all three alternatives there would be no significant impact to land use and plans, coastal zone resources, socioeconomics, low-income and minority populations, children, utilities, air quality, noise levels, cultural resources, hazardous materials and hazardous waste, health and safety, geology, topography, soils and sediments, water resources, and aquatic and terrestrial biological resources, and we are awaiting concurrence from the respective agencies.



All alternatives have the potential to affect fish and sea turtles species protected under the Endangered Species Act (ESA). In accordance with Section 7 of the ESA, the DoN consulted with the National Marine Fisheries Service (NMFS) for potential impacts to federally-listed species. NMFS concurred with the DoN's finding that the alternatives are not likely to adversely affect the endangered shortnose sturgeon, the Atlantic sturgeon, or ESA-listed sea turtles. No terrestrial animals or plants protected under the ESA, the Migratory Bird Treaty Act, or Bald and Golden Eagle Protection Act would be affected. Based on the DoN's analysis, the proposed action would not result in the incidental harassment of marine mammals protected under the Marine Mammal Protection Act.

The DoN is also consulting with NMFS regarding potential effects on essential fish habitat under the Magnuson Stevens Fishery Conservation and Management Act with the release of this Draft EIS. The DoN has made a preliminary finding that there would be no adverse impacts on essential fish habitat under any of the alternatives, and we are awaiting concurrence from NMFS.

Federal Coastal Consistency Determinations will be forwarded to Virginia and Maryland with the Draft EIS. Based on analysis, the DoN has made a preliminary finding that there would be no to minimal impact on coastal resources, and the Proposed Action is consistent to the maximum extent practical with Virginia and Maryland policies. We are awaiting concurrence from the Virginia and Maryland Coastal Management Programs.

The DoN consulted with the State Historic Preservation Officers (SHPOs) in Maryland and Virginia. Both SHPOs concluded there would be no adverse effect on National Register-listed or eligible resources in the areas of potential effect under all the alternatives.

NSWCDD will continue to adhere to general safety and environmental protective measures for all RDT&E activities and to implement specific protective measures for RDT&E activities using chemical and biological stimulants. No specific mitigation measures are required.

The Draft EIS was distributed to federal, state, and local agencies, elected officials, and other interested individuals and organizations. The public comment period will end on October 1, 2012.

The Draft EIS is available for review or download at:

<http://www.navsea.navy.mil/nswc/dahlgren/EIS/index.aspx>.

Copies of the Draft EIS are available for public review at the following

libraries:

1. Lewis Egerton Smoot Memorial Library, 8562 Dahlgren Road, King George, VA 22485;
2. Cooper Memorial Library, 20 Washington Avenue, Colonial Beach, VA 22443;
3. Northumberland Public Library, 7204 Northumberland Highway, Heathsville, VA 22473;
4. Charles County Public Library, La Plata Branch, 2 Garrett Avenue, La Plata, MD 20646; and
5. St. Mary's County Library, Leonardtown Branch, 23250 Hollywood Road, Leonardtown, MD 20650.

Federal, state, and local agencies, elected officials, and interested individuals and organizations are invited to be present or represented at the public hearings where oral and written comments on the Draft EIS will be received. Oral statements will be heard and transcribed by a stenographer; however, to ensure the accuracy of the record, all statements should be submitted in writing. All

[[Page 51530]]

statements, both oral and written, will become part of the public record on the Draft EIS and will be responded to in the Final EIS.

Equal weight will be given to both oral and written statements. In the interest of available time, and to ensure all who wish to give an oral statement have the opportunity to do so, each speaker's comments will be limited to two (2) minutes. If a long statement is to be presented, it should be summarized at the public hearing with the full text submitted either in writing at the hearing, or mailed, faxed, or emailed to Commander, Naval Surface Warfare Center Dahlgren Division, 6149 Welsh Road, Suite 203, Dahlgren, VA 22448-5130, Attn: Code C6 (NSWCDD PAO), Fax: 1-540-653-4679, or Email: [DLGR\\_NSWC\\_EIS@navy.mil](mailto:DLGR_NSWC_EIS@navy.mil) during the comment period. All written comments must be postmarked or received by October 01, 2012 to ensure they become part of the official record. All comments will be addressed in the Final EIS.

Dated: August 20, 2012.

C.K. Chiappetta,

Lieutenant Commander, Judge Advocate General's Corps, U.S. Navy, Federal  
Register Liaison Officer.

[FR Doc. 2012-20937 Filed 8-23-12; 8:45 am] BILLING CODE 3810-FF-P



September 12, 2012

NSWC-Dahlgren Division  
6149 Welsh Road, Suite 203  
Dahlgren, VA 22448-5117

Dear Mr. Smith:

I have reviewed the extensive material that was sent on the CD and understand now more of what are the mission and accomplishments at the Dahlgren NSWC.

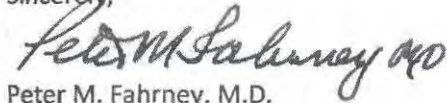
It is clear why the ballistic range was created down the Potomac River. In the early 1900s it made sense. Today, with the current population base, increased recreational activity and use of the river, this activity is less logical. My personal opinion is that this part of the Dahlgren mission should be phased out.

P003.1

There is one problem that I feel should be fixed at the NSWC. That is the periodic burn (explosives or other toxins) at Pumpkin Neck with the resultant pollution of the atmosphere. In this day of ecologic technology, there must be a different way to accomplish the task without polluting the atmosphere. Below are just a few of the photos that I have taken over the past few years illustrating the problem.

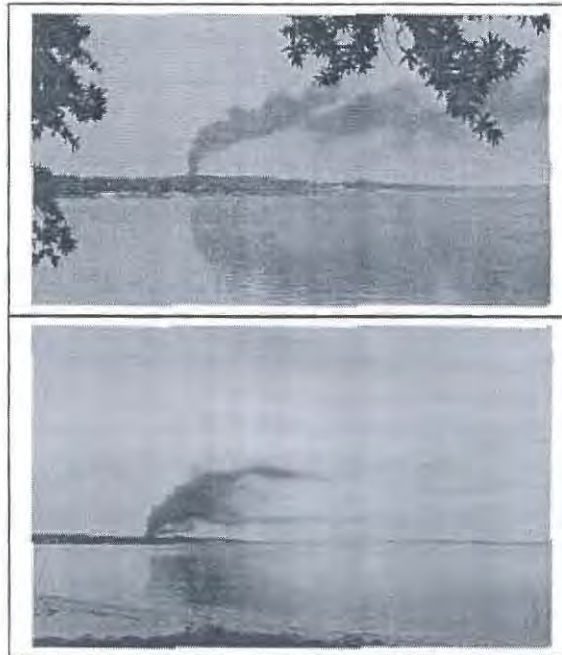
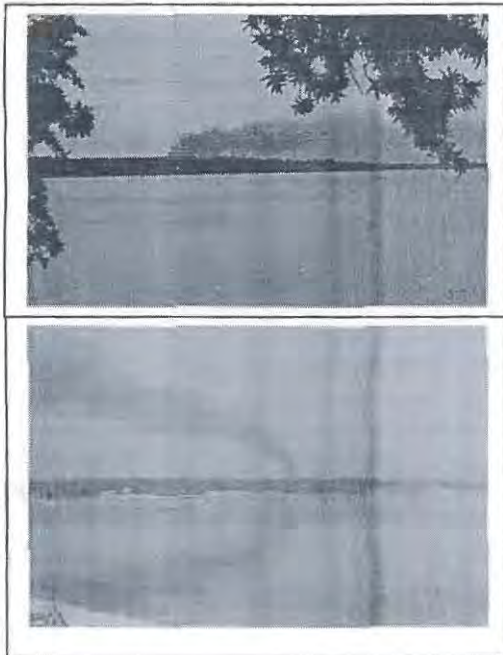
P003.2

Sincerely,



Peter M. Fahrney, M.D.

3419 Riverview Drive  
Colonial Beach, VA 22443-4830







## Comment Form

**Draft Environmental Impact Statement  
Outdoor Research, Development, Test and Evaluation Activities  
Naval Surface Warfare Center, Dahlgren Division**

Name: Virginia O'Brien

Title: \_\_\_\_\_

Agency/Organization: \_\_\_\_\_

Street Address: 4371 Danube Dr. CPO Box 663 Dahlgren Va

City, State, Zip: King George County, VA

Optional: Add your e-mail address and/or phone number so we can contact you if we have trouble reading your name, address, or comment: 5b836@verizon.net

540-663-3888

All comments become part of the public record and will be addressed in the Final Environmental Impact Statement (EIS). The name of the person making the comment will be included, but personal contact information will not be published.

Please print your comment and place the completed comment in the box on the comment table.

P004.1

Increase in Small Arms Fire  
[ Ques (Will all bullets be recovered? I'm concerned about lead in bullets impacting wildlife in the area. Or, will there be an indoor range instead?) ]

(Continue comments on back of sheet)

***Comments must be received or postmarked by October 1, 2012 to ensure that they become part of the official record and are assessed and considered as part of the Final EIS.***

E-mail: dlgr\_nswc\_eis@navy.mil

-----Original Message-----

From: B K [mailto:bhkkjk@gmail.com]

Sent: Friday, September 14, 2012 1:09 PM

To: dlgr\_nswc\_eis

Cc: KellyC@CharlesCounty.org; RobinsonK@charlescounty.org

Subject: EIS Comments re: Dahlgren

September 14, 2012

Commander, Attn. Code 6

Naval Surface Warfare Center Dahlgren

6149 Welsh Road, Suite 203

Dahlgren, VA 22448-5130

Re: Proposed Dahlgren Expansion and EIS

Dear Commander:

Expanding activities at Dahlgren undoubtedly will be approved; nevertheless, our family is not in favor of it.

With veterans in our family having served in Korea, Viet Nam and Iraq, we understand the value of experimentation and testing. In fact, a close relative has worked for years at an arsenal providing your facility and others with munitions.

We moved to Swan Point for peace and quiet. For as long as we've lived here (seven yrs.) we have endured Dahlgren's testing and find it problematic. Our home, at times, is so severely jarred that everything vibrates and rattles, and our son (an Iraq veteran with PTSD) is reluctant to visit.

The EIS evaluated historic buildings, but it would benefit our communities to know specifically how homes in the vicinity are being impacted. What is your responsibility, and what procedures exist for homeowners to follow if homes are damaged? Some homes are more substantially built, but after years of repeated vibrations all structures will suffer.

P005.1

Regardless of specific activities, the EIS does not provide the confidence needed to support expansion. As stated, findings are inconclusive, indecisive, and repetitive: ". . . may affect, but is not likely to adversely affect . . ." When something is deemed not likely, a possibility remains.

P005.2

For us, the consequences of current activities are minimally tolerant, and most emphatically we do not favor expanding activities at dusk, dawn, night, and in inclement weather as proposed.

Belinda and Kevin Keller  
15116 Bayshire Place  
Swan Point, MD 20645

cc: Charles County Commissioners, President Candice Quinn Kelly and Ken Robinson, District 1



ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING

Complete TRANSCRIPT of all the public speakers

taken in the public hearing held on September 11, 2012, at  
the Newburg Volunteer Rescue Squad, 12245 Rock Point Road,  
Newburg, Maryland, at 6:00 p.m.

Reported by: Cherryl J. Maddox

**MADDOX REPORTING SERVICE, INC.**  
Registered Professional Reporter  
684 Burnt House Point  
Colonial Beach, Virginia 22443  
(540) 372-6874  
(804) 224-7275

1 September 11, 2012

2 MODERATOR ANN SWOPE: Now we are moving  
3 to the hearing portion of our meeting. We will be  
4 taking your oral comments on the Draft EIS. We  
5 want your comments to insure that we thoroughly  
6 considered your inputs in our decision.

7 Your comments will be recorded  
8 for the public record. There is an official  
9 recorder present, who will record your oral  
10 comments and prepare a transcript.

11 We won't be responding to  
12 questions tonight, however substantial comments  
13 will be addressed in the final EIS. If you would  
14 like to speak and haven't signed up yet, you may  
15 do so at the sign up table right now or at any  
16 time while we are open to comment.

17 So, if you later feel you  
18 would like to make an additional oral comment, you  
19 may sign up to speak again. Each speaker will be  
20 allowed two minutes. We have a time keeper with a  
21 clock, it is located at this table up front. The  
22 clock will count down and sound an alarm when your  
23 time is up. If you have not finished your

1 comment, I can give you your text and we will, on  
2 a comment form, and it will be included in the  
3 public record.

4 As an alternative to  
5 publically stating your comment, you may dictate  
6 your comment to the official recorder in private  
7 after the public oral comments conclude. Please  
8 sign up at the table for private dictation.

9 Additionally, we welcome your  
10 written comments during or after the meeting.  
11 Comment forms are also available at the welcome  
12 table and can be deposited in the blue box right  
13 here on the comment table. To submit written  
14 comments after the meeting, please take a public  
15 hearing information sheet with you. You should  
16 have been provided one when you came in. There  
17 are also more we can give you on the way out.  
18 They provide our e-mail, our fax, and our mailing  
19 addresses. I remind you that your comments need  
20 to be post marked by October 1, 2012.

21 We will now take speakers in  
22 the order from the speaker sign up list. As I  
23 call your name, please come to the microphone and

1 state your name and any organization affiliation  
2 that you have.

3 Charlotte Simpson.

4 MS. SIMPSON: Hi, my name is Charlotte  
5 Simpson, I am coordinator of Neighborhood Crime  
6 Watch and Citizens on Patrol. I am also  
7 representative, it looks like tonight, of Citizen,  
8 the Cobb Island Citizens Association.

9 My comments are my own,  
10 though. I'm concerned about the noise and  
11 vibration. I live on Cobb Island. I live on the  
12 Wicomico side, but I have relatives on the Potomac  
13 side also. About a year ago, we had a day at  
14 hell. And you all did address it at our Citizen's  
15 Association. We thought we were being bombed. We  
16 thought we had missed the evacuation. You  
17 temporarily put up a sound and vibration monitor  
18 down on the island when you were testing for a  
19 couple of weeks. I would like to see one down  
20 there full time. That is what we are concerned  
21 about, this happening again if we have increase --  
22 I am reading on the impact statement that it could  
23 be tested at night. I object to that. I think we

P006.1

P006.2



P006.2

1 all do. We need our sleep. And I would really,  
2 really, like a monitor down there so you know it  
3 is happening. I know you do the weather, take  
4 everything into account, and I fully support you,  
5 I really do, but we have to live there. So, and I  
6 know that you will come down and look at cracked  
7 windows, broken stuff, but you know, I have never  
8 heard of you paying anything either.

P006.3

9 But that incident, we had  
10 things fall off walls and break, and this happens,  
11 vibration happens like that all of the time. If  
12 it is increased, it will greatly increase our  
13 quality of life. I would like to see the monitor  
14 and the noise addressed. Thank you.

15 MODERATOR ANN SWOPE: Thank you.

16 That is the only name we had  
17 on the list but maybe she generated your thoughts  
18 for more comments, so I will give you a couple of  
19 minutes if you have something you would like to  
20 say.

21 MR. ELWOOD: My name is Bob Elwood, I'm  
22 with the Potomac River Association and thank you  
23 for including us on your list and sending us the

1           EIS. I actually have questions but I'm not  
2           hearing how we deal with questions, but I can  
3           rephrase them or you can tell me how the questions  
4           are asked.

5                   MODERATOR ANN SWOPE: You can actually  
6           ask the question here and it will be answered in  
7           the final EIS.

8                   MR. ELWOOD: Are biological strains  
9           identifiable as coming genetically, identifiable  
10          as coming from Dahlgren, if that became an issue  
11          and need to identify where it came from. Can we  
12          differentiate naturally occurring basil lights  
13          from the released versions, is the question.

14                               And the, there was a statement  
15          of no significant impact. On the draft EIS, there  
16          was a reference to negligible impacts, and my  
17          question is, what's the difference between no  
18          significant -- is there a difference between no  
19          significant impact and a negligible impact. And  
20          the related question was, in analyzing  
21          environmental impact statements, has a whole lot  
22          of negligible impacts ever become a significant  
23          impact? And that's all I have. Thank you.

1 MODERATOR ANN SWOPE: Thank you. Are  
2 there any additional oral comments?

3 Norman Closta.

4 MR. CLOSTA: Okay, and as stated, my  
5 name is Norman Closta. I'm the board president of  
6 the Swan Point Property Owners Association here  
7 across the river from Dahlgren, and like the  
8 previous speaker, I would like to form some  
9 comments in the terms of questions.

10 One of the things I have got a  
11 question is going from a baseline to alternative  
12 one to alternative two, you are talking about a  
13 horizon of 27 years, I'm sorry, 15 years going  
14 down to 2027. What's not clear to me is what is  
15 the budget assumptions you are making with respect  
16 to the Defense Department budget and the ability  
17 to get that kind of comings to handle these kinds  
18 of scenarios that you are talking about, which  
19 alternative two you are talking about a 16 percent  
20 increase over the alternative one, and baseline  
21 combined. So, I would like to find out what  
22 assumptions you are make in terms of the budget.

23 Also, the question about the

1 biological and chemical testing, it's not clear as  
2 to why Ben Gay like products can stimulate and  
3 simulate toxins, and how we make that  
4 extrapolation, and what is the worth of doing  
5 these kind of testing when there is no known link  
6 up that is at least presented in the system.

7 And also, looking at my  
8 questions here, again it is assumptions. You  
9 check with various program managers on future  
10 requirements, so the requirements analysis are  
11 based upon what? Is this based upon a threat  
12 analysis or is it just program managers both  
13 within Dahlgren itself or scattered throughout the  
14 Defense Department who you support, is it based  
15 upon threats or is it based upon wishful thinking?  
16 And that's an important thing to understand as the  
17 basis for developing these alternatives, because  
18 there is a lot of money tied up in these things  
19 and also it goes back to the comment that you  
20 heard first about what's the basis for doing night  
21 testing and bad weather testing? It's not clear  
22 exactly what that is. Thank you.

23 MODERATOR ANN SWOPE: Thank you. Are



1           there any additional oral commenters from those  
2           who have spoken already or those who have not  
3           spoken? You are both eligible to come back to the  
4           podium.

5                               (no response from the  
6           audience)

7                       MR. CLOSTA: We can still submit written  
8           comments by the dead line?

9                       MODERATOR ANN SWOPE: Absolutely.

10                               This then concludes our public  
11           oral comment portion of the evening. You may  
12           provide oral comments in private as soon as I  
13           leave the podium. We will have you a separate  
14           room to do that, and I remind you that you may  
15           provide written comments while you are here or  
16           after you leave. You just need to make sure you  
17           get them postmarked by October 1. And we all at  
18           Naval Service Warfare Center Dahlgren Division  
19           Naval Support Activities South Potomac, thank you  
20           for your interest in our Draft and Environmental  
21           Impact Statement. Thank you.

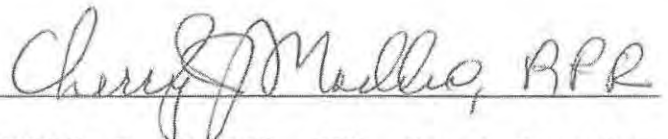
22                               -----  
23                               HEARING CONCLUDED AT 6:50 P.M.

## 1 CERTIFICATE OF COURT REPORTER

2 I, Cherryl J. Maddox, hereby certify that I was the  
3 Court Reporter in the hearings, held in Newburg Volunteer  
4 Rescue Squad, 12245 Rock Point Road, Newburg, Maryland, on  
5 September 11, 2012, at the time of the hearing herein.

6 I further certify that the foregoing transcript is a  
7 true and accurate record of the hearing herein.

8 Given under my hand this 8th day of October, 2012.  
9  
10  
11

12   
13 CHERRYL J. MADDOX, RPR, Court Reporter  
14  
15  
16  
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22  
23

ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING

Complete TRANSCRIPT of all the public speakers  
taken in the public hearing held on September 12, 2012, at  
the A. T. Johnson Alumni Museum, 18849 Kings Highway,  
Montross, Virginia, at 6:58 p.m.

Reported by: Cherryl J. Maddox

**MADDOX REPORTING SERVICE, INC.**  
Registered Professional Reporter  
684 Burnt House Point  
Colonial Beach, Virginia 22443  
(540) 372-6874  
(804) 224-7275

1 September 12, 2012

2  
3 MODERATOR PETE KOLAKOWSKI: Thank you,  
4 Captain Smith.

5 Now, let us move to the  
6 hearing portion of our meeting. While nobody has  
7 formally signed up, we want to give you the  
8 opportunity, as I read for the record the  
9 procedures and process for the public hearing that  
10 if you do wish to speak, I want to make this  
11 available to you. I will put it right here in  
12 case anybody wants to sign up to speak.

13 But let me read into the  
14 record the process for the public hearing:  
15 Comments will be recorded for the public record.  
16 There is an official recorder, and she is, will  
17 prepare a transcript from the recording of verbal  
18 and comments that are made. This is your public  
19 hearing and we will address both verbal and  
20 written substantive comments in the final EIS.

21 Again, I say that if you wish  
22 to speak and haven't signed up yet, please do so,  
23 so that we can recognize you and we will continue



1           this until we conclude the public hearing.

2                       Also, if you feel that you  
3           have additional comments to make, you may, after  
4           you are done speaking, ask to speak again. Each  
5           speaker will be allowed two minutes. We have a  
6           time keeper, which is located right over there,  
7           and this clock will count down the time that you  
8           have.

9                       You can also provide us your  
10          written or text comments and those will be entered  
11          into the record. As an alternative, if you do not  
12          wish to speak publically, our recorder can take  
13          your comments in private and we will provide that  
14          opportunity after we are done with the formal  
15          public comment period. If you wish to do this,  
16          please sign up and we have a sign up list with a  
17          private comment dictation if you wish to do that.

18                      As the Captain says, it will  
19          be reiterated again and again, we welcome your  
20          written comments, not only during this meeting,  
21          but even after the meeting, after this meeting.  
22          We have forms available that you can provide those  
23          comments. You can drop them off here or you can

1 present those either by mail to us or by e-mail.

2 We have a public hearing  
3 information sheet that we welcome you to take with  
4 you, so that you can send us any written comments,  
5 either by e-mail, fax, or mailing it in, the old  
6 snail mail method. Please be reminded that we  
7 need to have those by October 1st, or postmarked  
8 by October 1st.

9 Again, if you want to  
10 publically speak, we have a microphone, or we have  
11 an area that you can speak to the group, and I  
12 guess I would say I don't see a thunderous roar of  
13 people running to the sign up sheet, but let me  
14 offer to the people that are here, does anybody  
15 wish to speak, to provide any verbal comments?

16 (no response from the  
17 audience)

18 MODERATOR PETE KOLAKOWSKI: Again, what  
19 I would like to do before we conclude this public  
20 hearing, is again invite you to take an  
21 information sheet, if you haven't already done so,  
22 and if you do have any comments or input that you  
23 want us to consider as we finalize this

1 Environmental Impact Statement, please send it to  
2 us. We welcome your comments. And before I  
3 conclude this public hearing, let me say one, one  
4 last call does anybody wish to speak?

5 (no response from the  
6 audience)

7 MODERATOR PETE KOLAKOWSKI: Hearing  
8 none, let me say thank you, and we appreciate you  
9 coming on out. And again, if you haven't any  
10 comments that you want to give to us, October 1st,  
11 is the deadline. We will even take it by carrier  
12 pigeon, but the bottom line is please take the  
13 information, if you wish to send it to us.

14 Again, this concludes our  
15 public hearing. Thank you for coming out.


16 -----  
17 HEARING CONCLUDED AT 7:03 P.M.  
18  
19  
20  
21  
22  
23

CERTIFICATE OF COURT REPORTER

I, Cherryl J. Maddox, hereby certify that I was the Court Reporter in the hearings, held in A. T. Johnson Alumni Museum, 18849 Kings Highway, Montross, Virginia, on September 12, 2012, at the time of the hearing herein.

I further certify that the foregoing transcript is a true and accurate record of the hearing herein.

Given under my hand this 8th day of October, 2012.



CHERRYL J. MADDOX, RPR, Court Reporter



1  
ORIGINAL

1 ENVIRONMENTAL IMPACT STATEMENT

2 PUBLIC HEARING

3  
4  
5 Complete TRANSCRIPT of all the public speakers

6 taken in the public hearing held on September 13, 2012, at  
7 the University of Mary Washington - Dahlgren Campus, 4224  
8 University Drive, King George, Virginia, at 6:01 p.m.

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11 Reported by: Cherryl J. Maddox  
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18  
19

20 **MADDOX REPORTING SERVICE, INC.**  
21 Registered Professional Reporter  
22 684 Burnt House Point  
23 Colonial Beach, Virginia 22443  
(540) 372-6874  
(804) 224-7275

1 September 13, 2012

2

3 MODERATOR ANN SWOPE: Thank you, Captain  
4 Smith, we appreciate that summary of our preferred  
5 alternative, the actions that we are going to take  
6 to move forward.

7 Now, we are going to move to  
8 the hearing portion of our meeting. We will be  
9 taking oral comments on the draft EIS. We want  
10 your comments so we can assure that we have  
11 thoroughly considered your inputs in our decision.

12 Your comments will be recorded  
13 by the, for the public record by the official  
14 public recorder taking over here. We won't be  
15 responding to questions tonight. However,  
16 substantial comments or questions will be  
17 addressed in the final EIS. If you would like to  
18 speak and haven't signed up yet, which none of you  
19 have, you may now or any time prior to conclusion  
20 of this meeting, sign up.

21 So I'm going to explain some  
22 more things. I'm going to set this right here,  
23 you are welcome to sign up.

1                   So, if you would like to  
2                   speak, you may sign up right there and I will call  
3                   your name and you can come up and speak. Also, if  
4                   you later feel you have got an additional oral  
5                   comment to make, you may sign up and speak a  
6                   second time. Each speaker will be allowed two  
7                   minutes. We have a time keeper with a clock  
8                   located at the table across the side there. The  
9                   clock will count down and sound an alarm when your  
10                  time is up. If you haven't finished your comment,  
11                  we will give you time to put the text in a comment  
12                  form and we will include it with the public  
13                  record.

14                 As an alternative to  
15                 publically stating your comment, you may dictate  
16                 or comment in private after the oral commenting is  
17                 concluded. There is also a sign up table for the  
18                 private dictation outside the door and the private  
19                 dictation room is right across the hall.

20                 Additionally, we welcome your  
21                 written comments during or after the meeting.  
22                 Comment forms are available at the welcome table  
23                 right outside the door and you can deposit those

1 in the blue box on that table or you can make sure  
2 that we get them by October 1st. To submit  
3 written comments after this meeting, please take  
4 one of the public hearing information sheets home  
5 with you when you leave. They are available at  
6 the welcome table. They include our e-mail, fax  
7 and mailing addresses. You are reminded that your  
8 comments must be postmarked by October 1st.

9 We will now take speakers in  
10 order from the speakers list on the sign up sheet.  
11 You will come forward to the microphone when I  
12 read your name and once there, please state your  
13 name and any organizational affiliation that you  
14 are with.

15 Warren Veazey.

16 MR. VEAZEY: My name is Warren Veazey, I  
17 work on the Base, I live in the county. Only four  
18 thoughts and ideas and improvements, one talking  
19 to people. They have a lot of issues when they  
20 have to stop and delay things on the range when  
21 they are testing because of jet skis and boats. I  
22 don't know for sure, but I don't believe you guys  
23 post, I would imagine a billboard, with the map of

P007.1



1 the range at public marinas to inform jet skis and  
2 what not of the issues of that. I'm sure there  
3 was a lot of money having to stand down and wait  
4 for the range people here.

P007.1

5 I have one friend of mine in a  
6 soccer team who lives just down river right on the  
7 river, probably the second house physically down  
8 the range on the public property. He said he  
9 wasn't really worried about the noise. The one  
10 issue he had was when we do burns in Pumpkin Neck,  
11 a lot of diesel smoke comes up. He said it hasn't  
12 come over his house yet, but that is the one  
13 concern, he sees a big plume of diesel smoke.

P007.2

14 I notice the sound meters you  
15 have down the range, but with the new rail gun, I  
16 think it might be a good idea to put a sound meter  
17 to brief sound levels. And as far as, it was  
18 announced in the local paper, I never saw it first  
19 hand, saw the article in The Free Lance-Star about  
20 it, but I don't believe it was announced either to  
21 the base employees. I think it could be announced  
22 a little better. Maybe that is my own problem.

P007.3

23 Thank you.

1 MODERATOR ANN SWOPE: Thank you.

2 I apologize if I pronounce  
3 this wrong. But Dreda Newman.

4 MS. NEWMAN: My name is Dreda Newman,  
5 and I would like to just ask a question. I would  
6 like to pose a question. I have lived in the  
7 community quite awhile, was born in the same house  
8 I live in right now, right across the street from  
9 the Base, and I want to ask how is the use of  
10 chemical biological agents and the laser, how is  
11 that going to be monitored, other than by you? I  
12 mean how do we know if there is anything being  
13 used other than what they have stated that is  
14 being used? I'm just trusting that everything is  
15 above board and everything is wonderful.

P008.1

16 Also, if accidents or deaths  
17 occur on the Base, is the public informed or will  
18 we be informed or do we know? I mean, I'm not  
19 sure how much information I'm supposed to know.  
20 Maybe I'm not supposed to know what's going on in  
21 the Base, but I live, like I said, within a few  
22 yards of the base and I am just, I would like to  
23 know more about what's going on instead of just

P008.2

1                   whenever I happen to hear of somebody that works  
2                   on the base tell me something. Thank you.

3                   MODERATOR ANN SWOPE: Thank you.

4                                 In case those comments stirred  
5                   other comments within you, it's not too late to  
6                   sign up. If you will raise your hand, I will give  
7                   you the sign up sheet if you are interested. With  
8                   that, then --

9                   MR. WIGGINS: I'm here to take my  
10                  journalist hat off for a second, if I may.

11                  MODERATOR ANN SWOPE: Chris Wiggins.

12                  MR. WIGGINS: Christopher Wiggins,  
13                  W-I-G-I-N-S. I would recommend that because of  
14                  several weeks ago we received several reports of a  
15                  UFO, and on Twitter, it became a Twitter trend and  
16                  we narrowed it down to the Dahlgren area,  
17                  obviously maybe some drones were being used at  
18                  night to do some testing. But in light of that,  
19                  we did not run a story because we can't confirm  
20                  UFO's. Maybe it would be prudent to inform the  
21                  public if there are aircraft being used that  
22                  people might be concerned about.

P009.1

23                  MODERATOR ANN SWOPE: Thank you. Other

1           comments? Again, I remind you that you are able  
2           to sign up for private dictation, you can do that  
3           right outside.

4                           If there are no further oral  
5           comments at this time, this concludes the public  
6           oral comment portion of our evening. I also  
7           remind you that you can provide written comments.  
8           You can do that here with you and drop them in the  
9           box on your way out, or take some paper with you  
10          or just type an e-mail and mail it from your home  
11          as long as it is postmarked by October 1st.

12                          We appreciate your comments,  
13          your questions, and those questions and comments  
14          will be addressed in our final EIS, which is  
15          available. Take a form with you and you will see  
16          the web site where you can find those documents.  
17          Thank you very much.

18                           -----  
19                          HEARING CONCLUDED AT 7:03 P.M.




CERTIFICATE OF COURT REPORTER

I, Cherryl J. Maddox, hereby certify that I was the Court Reporter in the hearings, held in the University of Mary Washington - Dahlgren Campus, 4224 University Drive, King George, Virginia, on September 13, 2012, at the time of the hearing herein.

I further certify that the foregoing transcript is a true and accurate record of the hearing herein.

Given under my hand this 8th day of October, 2012.



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CHERRYL J. MADDOX, RPR, Court Reporter

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## **APPENDIX B**

### **SUMMARY OF COMPREHENSIVE PLANNING GOALS RELEVANT TO THE PROPOSED ACTION**

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## B.1 Charles County

### B.1.1 Comprehensive Plan

Charles County last updated its comprehensive plan in 2006 (Charles County, 2006a). With regard to land use, the plan's goal is to "Maintain a planned land use pattern of compatible utilization of land and water guiding future growth into efficient and serviceable form." Specific objectives include (only those objectives relevant to the scope of this EIS are listed here):

- Concentrate the majority of future growth in areas of the county already served or proposed to be served with public water and sewer. Direct 75 percent of future growth to the Mattawoman sewer service area and the towns of Indian Head and La Plata.
- Designate areas of the county dominated by agricultural and forest cover for rural development densities, agricultural use, and conservation.
- Provide services for surrounding rural and agriculture areas in existing villages while protecting their unique character.
- Protect environmentally sensitive areas in using the county's abundant waterfront. Guide development away from areas vulnerable to natural hazards.
- Encourage future industrial and office uses to locate in and near existing office and industrial areas in Waldorf (including St. Charles), in White Plains, near the Pomonkey Airport, in the towns, and adjacent to the Nice Bridge.
- Concentrate future active recreation facilities in and near the county's major development centers and establish open space on sensitive environmental lands as a means of preserving them.
- Require residential development to be efficient, serviceable, and designed to protect and retain portions of open space that will assure protection of sensitive resources.

The county's land use concept plan identifies 12 districts: 1) Development Districts; 2) Development District Residential Districts; 3) Employment and Industrial Districts; 4) Commercial and Business Districts; 5) Mixed Use Districts; 6) Deferred Development District; 7) Neighborhood Conservation Districts; 8) Village Centers; 9) Agricultural Conservation District; 10) Rural Conservation District; 11) Rural Residential Districts; 12) Highway Corridor Districts.

Most of the county's Potomac shoreline falls within the Rural Conservation District, with a small Employment and Industrial District to the south of the Harry Nice Bridge (where the Morgantown power plant is located); a small Commercial and Business District just north of the same bridge; and a Mixed Used District at Swan Point. The following Village Centers are on or near the shore: Morgantown; Issue; Rock Point; and Cobb Island. A brief description of the county's approach to development in these types of districts follows.

- **Rural Conservation District:** The Rural Conservation District is intended to preserve rural character and open space, to foster agricultural activities and opportunities, to protect valuable resources, and to allow for diversification of income productive activities. It is further intended to prevent premature urbanization in areas where public utilities, roads, and other public facilities are planned to meet rural needs only. The Rural Conservation District provides for a full range of agricultural and farming activities and protects these established uses from encroaching development. However, it also accommodates residential densities up to one dwelling unit per three acres with cluster development practices permitted. Within the district, there are existing scattered clusters and individual non-farm residences on small parcels of land. Although this may satisfy some limited rural housing need or demand, the prime objective of this District is not to accommodate such development.
- **Employment and Industrial District:** These are areas designed to provide locations for additional, up-graded, and diverse job opportunities for residents of the county. They were selected based on previous similar use, proximity to highways, water, and sewer services; possibility to accommodate a wide range of land uses and occupations; and opportunities to minimize impacts on adjacent land uses.
- **Commercial and Business District:** These are areas where future commercial development should occur. They are centrally located to serve the most concentrated population areas of the county and are accessible by major state highways. Combined with the Mixed Use Districts and Villages, these areas will channel commercial development into nodes.
- **Mixed-Use Districts:** These areas encourage a mix of medium to high density residential, business, and employment uses in a compact, well-designed, pedestrian-friendly environment. The Swan Point district is defined under a unique approval granted pursuant to the 1974 Zoning Ordinance and projects in this area will continue to develop consistent with the terms of the approval.
- **Village Centers:** The Village concept recognizes and provides for the special needs of rural unincorporated population centers. Villages serve as rural service centers and locations for rural residential development. Characteristics common to most of the villages are post offices, country stores and, frequently, fire departments. Villages tend to be basically residential in character, but they can offer some employment through limited commercial services as well as public or institutional uses. Generally, villages should remain small in physical area and population size; continue to provide limited, highly localized commercial services (such as a gas station or general store); provide limited employment opportunities; and provide a population density consistent with the existing development pattern and other objectives of the plan.



## B.1.2 Land Preservation, Parks, and Recreation Plan

Charles County's most recent approved land preservation, parks, and recreation plan (LPPRP) was adopted in June 2006 (Charles County, 2006b). At the time of this writing (June 2012), Charles County is in the process of updating its LPPRP. Because the 2012 draft plan is a working document still subject to review and potentially substantive modifications, this section references the 2006 LPPRP only.

With respect to the Recreation element, the plan identifies primary deficits for baseball/softball diamonds, indoor basketball courts, multi-purpose fields for team sports, trails, and fishing from piers. Secondary deficits are identified for boat ramps and public water access, playgrounds, picnic pavilions, and dog parks. The plan's major recommendations for recreation include (only those recommendations relevant to the scope of this EIS are listed):

- Completion of parks and recreation facilities currently in various phases of development, including Friendship Farm Park.
- Development at Malloys Bay focusing on natural resource-based recreation, development of a lodge or other form of accommodation at a site in west county to capitalize on the opportunities for ecotourism, trails, and a boat launch at Chapel Point State Park.

With respect to the agricultural land preservation element, maintaining rural character and agriculture as an industry is identified as a major goal of the county. Specific recommendations include (only those recommendations relevant to the scope of this EIS are listed):

- Adopt a target area for agricultural land preservation, tentatively identified in the Allens Fresh, Cobb Neck, and Charlotte Hall areas.
- Adopt zoning and development regulations that are protective of agricultural land resources.

With respect to the natural resource land conservation element, the plan notes that residential development in rural areas continues to make conservation of large contiguous blocks of natural resources land a significant challenge. Major recommendations include (only those recommendations relevant to the scope of this EIS are listed):

- Create a natural resource land conservation focus area. This area is tentatively identified in the western part of the county.
- Seek to protect 50 percent of the county in open space.
- Strengthen efforts, such as through clustering requirements, to reduce the impacts of rural development on natural resources in rural parts of the county.

- Increase the pace of capital projects and program development activities for eco-tourism and resource-based recreation.
- 

## **B.2 St. Mary's County**

### **B.2.1 Comprehensive Plan**

St. Mary's County's comprehensive plan, titled *Quality of Life in St. Mary's County – A Strategy for the 21st Century*, was last updated in April 2010 (St. Mary's County, 2010). It expresses the county's vision for its future, which is to "Preserve and enhance the quality of life by recognizing and protecting the unique character of St. Mary's County as a Chesapeake Bay peninsula. Foster economic growth and create an atmosphere of excellence by focusing and managing growth to create vibrant, attractive communities; by protecting the rural character and economy of the countryside by nurturing the shoreline and adjacent waters; and by preserving and capitalizing on the natural resources and historical quality of the county."

With respect to growth management, the plan divides the county into growth areas and preservation areas to concentrate growth in suitable areas while preserving resources and rural character elsewhere. For each area, the plan establishes goals and policies, densities and development character, and indicates areas as either receiving (growth areas) or sending (other areas) areas for transferred development rights. Growth areas are targeted to receive a majority of residential, commercial, and industrial growth and include:

- **Development Districts.** These primary growth centers are Lexington Park and Leonardtown; they are urban in pattern and form, designated for intensive residential, commercial, and industrial development supported by a priority for provision of community facilities, services, and amenities. Development districts are concentrated in the north central part of the county; only Leonardtown is turned toward the Potomac River, via Breton Bay.
- **Town Centers.** These secondary growth centers are Charlotte Hall, New Market, Mechanicsville, Hollywood, and Piney Point; they are urban in pattern and form, designated for moderately intense residential, commercial, and industrial development supported by provision of community facilities and services. One designated town center – Piney Point – lies along the Potomac River.
- **Village Centers.** These third-order growth centers are Callaway, Chaptico, Clements, Loveville, Ridge, St. Inigoes, and Valley Lee. They are intended to serve as the focus for rural community facilities, services, and activities. All the village centers are located in the south of the county, with Clements, Valley Lee, St. Inigoes, and Ridge being closest to the water.

Rural areas comprise the majority of the county's land, including its southern shoreline. Like growth areas, for land use planning purposes, rural areas are divided into three types:

- **Rural Preservation Areas.** This includes prime farm land, timber land, mineral resource lands, agriculturally-related industries, and limited non-farm cottage industries. Low-density, non-farm residential developments characteristic of the county's rural character are to be preserved for a wide range of economic and aesthetic purposes. While the plan recognizes the continued nonconforming commercial and residential activities on existing parcels throughout the district, it aims to limit their expansion or creation.
- **Rural Service Centers.** This includes crossroad commercial, retail and business development at Avenue, Budds Creek, Dameron, Helen, Oraville, Park Hall, and St. James that has traditionally provided very localized services for the surrounding rural and agricultural area. These areas are designated and intended to offer limited opportunity for infill development to provide focused commercial nodes in the rural areas.
- **Rural Commercial Areas.** These are established areas of commercial use along county or state roadways that existed outside growth areas at time of passage of the plan. This category provides for continuation of commercial uses and for the commercial development of certain vacant properties where the use and commercial zoning classifications predate the plan and where commercial use or development would generally not alter the historic character of these areas located outside of a development district or town or village center as delineated in the plan.

Finally, protected areas fall into two categories:

- **Resource Protection Areas.** These are sensitive areas such as steep slopes, floodplains, wetlands, stream corridors, hydric soils, and critical natural habitats, where development is hazardous or detrimental. Also included are significant natural, cultural and historic resource areas subject to loss or harm as a result of destruction, significant alteration, or inadequate protection from impacts of off-site development; and Chesapeake Bay critical areas.
- **Neighborhood Conservation areas.** These are established, predominately residential areas, where the existing development patterns and neighborhood character are to be maintained, including communities with concentrations of structures with historic designation. Limited infill development is allowed consistent with the existing patterns and character within the affected district.

---

## **B.2.2 Land Preservation, Parks, and Recreation Plan**

St. Mary's County's LPPRP (St. Mary's County, 2005) identifies sizable deficits for a number of recreational facilities. These deficits are expected to grow out to 2020 and beyond as population increases, unless facilities are programmed and developed to keep pace with growth. The most significant deficits currently are: baseball/softball diamonds; multipurpose fields for team sports; indoor facilities for basketball, volley ball, etc.; pedestrian and bike trails; fishing areas; and boat ramps/water access. The greatest needs are expected to be in Election Districts 8 and 5, in the north and north central parts of the county.

In the light of the identified needs, the LPPRP sets out the county's parks and recreation priorities. Among the highlights of the program most relevant to the scope of this EIS are:

- A 25- to 50-acre waterfront park along the Potomac River in the 3<sup>rd</sup> Election District.
- A regional park in the central portion of the county, most likely in the 3<sup>rd</sup> Election District.
- Leonardtown Landing Waterfront Park.
- Colton's Point Park.

The plan also identifies an agricultural preservation focus area in the northwest part of the county, which includes areas bordering the Wicomico River and St. Clements Bay. It encompasses the portion of the county's Rural Preservation District that contains the largest concentration of protected lands and working farms and is relatively little compromised by residential development. This area would be the focus for an enhanced package of farmland preservation and enhancement tools.

Finally, a natural resources conservation focus area is delineated running approximately north-south through the north central part of the county. This area is anchored by the existing Huntersville Rural Legacy area in the north and the St. Mary's River Wildland in the south. Between these two areas is the Breton Bay watershed, with its valuable natural resources. The natural resources conservation focus area would become the focus for a series of conservation programs.

---

### **B.3 Northumberland County**

Northumberland County's current comprehensive plan was adopted in June 2006 (Northumberland County, June 2006). The plan's preface notes that though the county has not experienced development pressures as strong as those felt in other Virginia counties, growth is inevitable and must be encouraged, but in a way that benefits the county, residents, and businesses and does not hurt the county's character and attractiveness. The county's guiding vision for the future states that "[...] Northumberland County will preserve its rural character and its maritime heritage while fostering economic growth and the well-being of its citizens. Economic growth will occur that provides jobs, supports agricultural and water-based activities and provides services to the retired community. Residential, commercial, and industrial development will be supported that enhances the social and economic life of the county and conserves its natural resources. It will become a model of planned waterfront residential and village business development that ensures the quality of life of its residents while attracting desirable new growth [...]."

The county's land use plan consists of five distinct "building blocks:"



- Rural Uplands. This is the area of the county that lies landward from the topographic feature known as the Suffolk Scarp and generally is above 50 feet in elevation above sea level.
- Rural Low Shelf. This consists of the remainder of the county lying seaward from the Suffolk Scarp and generally between zero and 50 feet above sea level.
- Shoreline Conservation Area. This is an area extending from the edge of tidal waters 1,000 feet inland. It overlaps the Rural Low Shelf and the Rural Uplands in many places.
- Villages. These are areas of concentrated development that have become commercial hubs or areas of distinctive community identity.
- Overlays. These are areas of particular interest with special land use considerations, including shoreline development, transportation corridors, and reservoirs.

County land within the area under consideration here mostly lies within the Rural Low Shelf and Shoreline Conservation areas. For these areas, the plan lays out a range of policies to guide development, including the following ones (only those policies most relevant to the scope of this EIS are listed):

- Rural Low Shelf: 1) Land usage is intended to be a general mix of low-density residential and agricultural. Residential development should be dispersed or arranged in clusters to avoid excessive linear development along existing road frontage. 2) Development near streams should avoid steep slopes, avoid excessive removal of natural vegetation and maintain riparian buffers as required by the Chesapeake Bay Act. 3) Except for country stores and convenience stores, commercial and industrial sites unrelated to marine activities should not be established in this area.
- Shoreline Conservation Area: 1) Residential subdivisions should be allowed conditionally with the goals of protecting agricultural and forested lands, preserving the natural beauty, wetlands, dunes, beaches and other natural resources along the shoreline and adjacent lands, and maintaining as low a density of development as possible. 2) New subdivisions should be planned, whenever feasible, to provide public access to the Chesapeake Bay including beaches, boat ramps, fishing points and other water-oriented recreational activities. The establishment of community facilities on the water for the common use of the residents within subdivisions should be encouraged as a means to reduce the number of individual boat houses and piers. 3) In order to protect existing farmland and forests while permitting desirable development, there should be a requirement that the property owner place a significant portion of the original parcel acreage into open space or forest. This standard should apply for all parcels or collections of parcels above some minimum value of acreage. 4) New water-oriented enterprises that help the economic development of the county and support tourism, sports fishing, commercial fisheries, or other water-related activities are encouraged to be established at sites where they can be accommodated by deep water and appropriate access.

## B.4 Westmoreland County

Westmoreland County's current comprehensive plan was adopted in 2012 (Westmoreland County, 2010). The land use element of the plan identifies primary and secondary growth areas, within which a majority of future development should occur. The primary growth areas are those immediately adjacent to the towns of Colonial Beach and Montross and are the preferred locations for new residential, commercial, and industrial development (e.g., moderate-density, single-family, and multi-family housing; small- to large-scale retail sales and services; offices and office parks; and light manufacturing, warehousing, and distribution). Public infrastructure, and new or expanded community facilities and services also are expected to be primarily located in those areas.

Secondary growth areas are located at the intersection of primary highways or heavily-traveled secondary roads. They include Oak Grove, Carmel Church, Coles Point, Kinsale, Nomini Grove, Hague, and Monroe Hall. Appropriate development in these areas includes low- to moderate-density housing, small-scale retail sales and services, offices and small office parks, light manufacturing, warehousing and distribution, and public and community facilities. Of the secondary growth areas, all but Carmel Church and Nomini Grove are located close to the Potomac shoreline or on one of the estuaries and bays opening into the river. Specific recommendations for these areas are as follows:

- Oak Grove and Monroe Hall: Development in these areas should reinforce community identity and a visual separation from the Colonia Beach primary growth area. In Oak Grove, commercial and office development should be limited to those businesses necessary to serve the area.
- Coles Point and Kinsale: Emphasis should be placed on preserving the area's character, tree cover, and water quality, as well as preserving and creating public access points to the Potomac River or Yeocomico River. Principal recommended uses include recreational and water-related establishments. In Coles Point, tourist-related commercial uses may be appropriate. Commercial and office development in Kinsale should be limited to those businesses necessary to serve the area. In both locations, uses that require a waterfront location and/or are oriented to the area's waterfront amenities are encouraged.
- Hague: Commercial and office development should be limited to what is necessary to serve the residents of the surrounding area.

Designated, transitional residential areas of moderate density (about four units per acre) are located at the edge of the designated growth areas and separate them from the rural lands, where such uses as farms, recreational, educational, and religious facilities as well as very low-density residential uses are recommended. Rural lands are intended to remain primarily for agricultural or forestland use, although with low-density residential, and scattered commercial, institutional, and industrial uses.

The land use plan also has a Conservation designation, which includes all Chesapeake Bay Resource Protection Areas, lands within 100 feet of intermittent streams, slopes greater than 25 percent, flood hazard areas, and critical habitats. Such lands are meant to remain in their natural state but may be encroached upon or developed provided impacts are properly mitigated. Examples of preferred land uses in those areas include hunting and fishing clubs, fish and game preserves, parks, and other passive recreational facilities.

---

## **B.5 Town of Colonial Beach**

In January 2010, Colonial Beach adopted its updated Comprehensive Plan for the years 2009-2029 (Colonial Beach, 2010), which replaces the previous document dating back to 1999. This section briefly summarizes the land use element of the 2009 plan.

With respect to land use, the plan's goal is to create an "Overall pattern of development that reflects the vision of the community by preserving its historic resort small town character, improving its citizens' quality of life, and protecting the town's natural resources."

Objectives include:

- Improve the town's aesthetic quality to make a positive and lasting impression on visitors to the community and enhance the quality of life for residents.
- Appropriate mix of residential, commercial, and employment uses, which will provide adequate housing, shopping, and employment opportunities for present and future residents.
- Land use and development coordination with Westmoreland County for adjoining land within a one-mile radius of the town's corporate limits.
- Adequate open and green space.

The document's Future Land Use Plan outlines a generalized land use concept for Colonial Beach and its surroundings. The plan largely reflects existing land use patterns but allows for new and infill development in the existing developed and undeveloped portions of town and recommends that new development should be an extension and revitalization of the traditional patterns of growth.

The Future Land Use Plan and associated map define several land use designations, of which the two most important ones (in terms of area) are Neighborhood Preservation and Planned Unit Development (PUD). The purpose of the Neighborhood Preservation district is to meet the present and future housing needs of the citizens of Colonial Beach while maintaining the existing residential character of the areas within the district. The district encompasses all existing residential neighborhoods – Bluff Point, Riverside Meadows, Classic Shores, Central Area, and The Point – and most of the area between the Potomac River, Monroe Bay, and Route 205, where these neighborhoods are located. Each neighborhood is unique and it is important that it

preserve its unique identity. The plan supports the stabilization and preservation of such residential areas while promoting rehabilitation and infill development, as appropriate.

The PUD district is located on a large portion of the Potomac Crossing planning area, in the northwest corner of the town. There is an approved site plan for this area comprised of a mix of residential structures, a golf course, and limited commercial development.

Other land use designations include Commercial (General, Historic Resort, and Maritime, mostly concentrated along Colonial Avenue and Washington Avenue); Public Open Space (parks, trail corridors, and beaches); Conservation (Chesapeake Bay Resource Protection Areas, including shorelines, wetlands, water bodies, and drainage ways); Municipal (for municipal services and schools); Residential (in addition to Neighborhood Preservation and PUD, this category includes Cluster Development for currently vacant or agricultural areas and Medium-Density Multi-Family Residential, covering only existing such developments, though new multi-family developments may be allowed in the Neighborhood Preservation district if they are built consistent with the existing character of the area).

---

## **B.6 King George County**

King George County's most recent approved comprehensive plan was adopted in 2006 (King George County, 2006). At the time of this writing (June 2012), King George County is in the process of updating its comprehensive plan. Because the 2012 draft comprehensive plan is a working document still subject to review and potentially substantive modifications, this section references the 2006 plan only.

The plan's overall goals include the following:

- Preserve the rural characteristics of King George County.
- Encourage land use patterns that sustain and enhance the health, safety, morals, order, convenience, prosperity and general welfare of the residents of King George County.
- Promote a healthy, diversified economy in the county.
- Encourage protection of critical environmental resources and maintain renewable natural resources for future generations.
- Encourage a balance of residential zoning classifications to meet the needs of all county residents while concentrating and guiding growth in and around service districts as designated in the plan.

To guide development in accordance with the stated goals, the plan defines two types of planning areas, each appropriate for a certain type of development:



- **Primary Settlement Areas:** these are areas served by public water and sewer systems. They include Courthouse, Dahlgren, Fairview Beach, Hopyard, Oakland Park, Cleydael (the area south of the intersection of Route 218 and Route 301), and Route 3 West (area around the county's industrial park, landfill, and the Birchwood power facility). In those areas, development proposals are encouraged to be in the form of traditional compact development with connected neighborhoods and pedestrian-oriented local streets.
- **Rural Development Areas:** these comprise the parts of the county that are largely agricultural and forested with dispersed residential and rural business uses. These areas are planned to remain rural, with only very low-density residential uses permitted in addition to agriculture and forest activities.

Of the Primary Settlement Areas, two are within proximity of Dahlgren: Dahlgren, immediately adjacent to the installation; and Cleydael, to the southwest of Dahlgren. The Potomac River/North Rural Development Area includes the remaining county land around Dahlgren.

The Dahlgren Primary Settlement Area surrounds NSF Dahlgren to the north and west; to the southwest, it includes the commercial development around the intersection of Route 218 and Route 301; to the northwest, it includes the land along Route 614. Lot sizes in this area are some of the smallest in the county, as the Dahlgren community and other major subdivisions are being developed on approximately 15,000-square-foot lots. The area is one of two locations in the county recommended for the creation of a "Village District," to be developed around the compact development corridor existing along Route 206 and the adjacent neighborhoods. The goal of the village district is to create a more efficient use of land and infrastructure and to promote a sense of community through development on a human scale, with special attention to walking distances and civic spaces such as parks and public buildings. Key Policies and implementation strategies for the Dahlgren Primary Settlement Area include, among others:

- The area is one of the primary locations for future residential development and community facilities in the county, including the possibility for potential rezoning to denser residential and mixed-use zoning districts.
- The proposed residential density ranges from one dwelling unit per one to five acres in areas without public utilities to up to eight units per acre in areas with public utilities.
- Commercial development is recommended to follow the existing prevailing development pattern along Routes 301, 206 east of Route 301, and that portion of 614 adjacent to Route 206.

The Cleydael Primary Settlement Area contains over 900 acres of mixed-use zoning and is located between Routes 218, 301 and 206. The area contains three percent of the county's population and approximately 256 dwelling units. Lot sizes average two acres in size. In this area, the county encourages moderate density residential uses. Densities should be between one unit per two to ten acres on property adjacent to Route 206 and an average of one unit per acre on property served by public utilities on property adjacent to Route 301. Commercial and industrial uses should be limited to the property adjacent to Route 301.

The surrounding Potomac River/North Rural Development Area includes all of the land in King George County located north of Route 3, with the exception of the Primary Settlement Areas. A key land use feature within this district is the number of subdivisions in which each lot is ten acres or more in size that are served exclusively by private roads. The Area contains 49 percent of the county's population and approximately 3,861 housing units. However, it has remained rural in character with a historical pattern of low-density residential development. Redevelopment issues in this district will be primarily the reestablishment of the buffer area along the Potomac River, major portions of which have been replaced with shoreline stabilization structures. Key policies and implementation strategies include, among others:

- Encourage very low-density rural residential growth and discourage higher density residential and commercial development. Residential densities should be in range of one dwelling unit per two to ten or more acres, unless clustering development techniques are employed with large blocks of open space being preserved.
- Encourage agricultural and forest preservation.
- Implement and encourage large lot and/or sliding scale zoning in the areas currently zoned agricultural to promote the preservation of agricultural land.
- Ensure that new residential development occurs only at very low densities and preferably in a clustered pattern, with large blocks of agricultural and forestlands permanently preserved in conjunction with the clustered development.
- Enhance limited public access to the Potomac; allow limited, small scale, carefully designed and accessed public boat ramps along the river.
- Work through the local wetlands board to encourage the protection of the Potomac River shoreline.
- Using Virginia Marine Resource Guidelines, seek one additional site to provide public waterfront access to the Potomac River.
- Encourage through zoning and subdivision requirements the continued creation of community access to the waterfront in subdivisions developed along the Potomac River.

---

## B.7 References

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## **APPENDIX C**

### **NSWCDD NOISE MANAGEMENT PROCESS**

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## DEPARTMENT OF THE NAVY

NAVAL SURFACE WARFARE CENTER  
DAHLGREN DIVISION  
17320 DAHLGREN ROAD  
DAHLGREN, VIRGINIA 22448-5100

IN REPLY REFER TO  
NSWCDDINST 5100.6  
CX8-WG/CX03-VB  
MAR 18 2011

### NSWCDD INSTRUCTION 5100.6

From: Commander, Dahlgren Division, Naval Surface Warfare Center

Subj: OUTDOOR NOISE MANAGEMENT PROCESS

Ref: (a) OPNAVINST 5090.1 (series), "Environmental Readiness Program Manual"  
(b) NSWCDDLINST 5091.1, "Hazardous Waste and Environmental Management System Programs"  
(c) DODI 4715.13, DOD Noise Program  
(d) NSWCDDL Environmental Policy  
(e) Outdoor Noise Management Process Manual

Encl: (1) Live Rounds Authorization Request

#### 1. Purpose.

a. In accordance with references (a) through (e), this instruction is to establish a noise-based management process for those outdoor Naval Surface Warfare Center, Dahlgren Site (NSWCDDL) operations that could potentially impact sensitive surface areas.

b. Establish a procedure that ensures Blind Load and Plug (BL&P) rounds are used instead of live rounds whenever possible. Live rounds will only be used when the appropriate justification, in accordance with enclosure (1).

#### 2. Cancellation. None

#### 3. Definitions.

a. Blind Load and Plug (BL&P) Rounds: Also commonly referred to as "inert," these rounds have a core composed of sand or concrete with no energetic material (no explosive core or propellant), although they may have a fuze (a detonating device) with a small amount of explosive material, a sensor, or other items for testing.

MAR 18 2011

b. Live Rounds: Composed of energetic material plus an outer casing, fragmentation material, a fuze, sensors, timers, or other items for testing.

c. Noise: Sound resulting from outdoor NSWCDL Research, Development, Test and Evaluation (RDT&E) and ordnance treatment operations.

d. Operations: Actions conducted in accordance with applicable Standard Operating Procedures (SOPs).

e. Sensitive Surface Areas:

(1) Towns, communities, and populated areas external to Naval Support Facility (NSF) Dahlgren. Examples include Cobb Island, Colonial Beach, and Swan Point.

(2) Base Operating Support (BOS) areas serving the community within NSF Dahlgren. Examples include Morale, Welfare, and Recreation (MWR) facilities; housing; medical clinic; and the school.

(3) Do not include NSWCDL occupational functions performed at NSF Dahlgren. These functions are addressed by Occupational Safety and Health (OSH) regulations and NSWCDL guidance and requirements.

4. Applicability and Scope. This instruction applies to military and civilian personnel and Government contractors supporting NSWCDL outdoor RDT&E and ordnance treatment operations.

5. Policy. Through effective outdoor noise management, NSWCDL meets the requirements and policies of references (a) through (c), and demonstrates continued commitment to reference (d).

6. Responsibilities.

a. The Naval Surface Warfare Center, Dahlgren Division (NSWCDD) Commander shall ensure outdoor noise management policies and procedures are developed and implemented as required by reference (a).

b. The Safety and Environmental (S&E) Office shall ensure:



MAR 18 2011

(1) NSWCDL Outdoor Noise Management Process development, implementation, and maintenance on behalf of the NSWCDD Commander.

(2) Training is provided for personnel as required by references (a) and (b).

c. Department and Division Heads shall ensure:

(1) Operations are conducted consistent with reference (e).

(2) Personnel receive required training and understand outdoor noise management responsibilities and procedures.

(3) Reference (e) remains applicable to operations, with any necessary changes reported to the Safety and Environmental (S&E) Office as they are identified.

(4) That all contractor personnel are advised as appropriate of the requirements of this instruction.

d. The Engagement Systems Department, Test and Evaluation Division Head shall ensure that enclosure (1) is submitted to the S&E Office prior to conducting tests that use live rounds.

e. The NSWCDL Range Safety Director shall ensure reference (e) content remains current and applicable to operations.

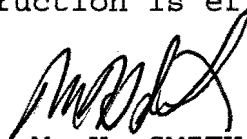
f. Supervisors (defined as a Branch Head equivalent or higher) shall:

(1) Integrate the direction provided by reference (e) into their operations.

(2) Be accountable for responsibilities found in references (a) and (b) and standard operating procedures (SOPs) pursuant to this instruction.

g. Personnel shall follow all applicable rules, regulations, and Standard Operating Procedures pursuant to this instruction.

7. Effective Date. This instruction is effective immediately.



M. H. SMITH



Phone: 540-653-8686

Fax: 540-653-7965

## Live Rounds Authorization Request

Name:	<input type="text"/>	Program:	<input type="text"/>
Code:	<input type="text"/>	SOP:	<input type="text"/>
Phone:	<input type="text"/>	Round type:	<input type="text"/>
Date requested:	<input type="text"/>	Quantity:	<input type="text"/>
Date needed:	<input type="text"/>		

Test description:

Justification for using Live (rather than Blind Load and Plug) Rounds:

☐ Approved - Engagement Systems Department, Test and Evaluation Division Head

*Approved form must be submitted to the Safety and Environmental Office prior to testing.*

*Distribution authorized to U.S. Government agencies and their contractors.*

Enclosure (1)

**Naval Surface Warfare Center Dahlgren Site  
Outdoor Noise Management Process Manual**



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### Record of Revisions

Release Number	Date	Section	Page	Summary/History of Changes
0	Aug 2010	All	All	Initial Release

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## **Acronyms and Abbreviations**

BL&P	Blind Load and Plug
BOS	Base Operating Support
dBp	decibel(s) peak
DOT	Department of Transportation
EHW	Explosive Hazardous Waste
lbs	pounds
mm	millimeter
MOA	Memorandum of Agreement
MWR	Morale, Welfare, and Recreation
NEW	Net Explosive Weight
NSASP	Naval Support Activity South Potomac
NSWCDD	Dahlgren Division, Naval Surface Warfare Center
NSWCDL	Naval Surface Warfare Center Dahlgren Site
NSWCDLINST	NSWCDL Instruction
NSF	Naval Support Facility
OSH	Occupational Safety and Health
PAO	Public Affairs Office
PRTR	Potomac River Test Range
RDT&E	Research, Development, Test and Evaluation
SIPS	Sound Intensity Prediction System
SOP	Standard Operating Procedure

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## Definitions

**Blind Load and Plug (BL&P) Rounds:** Also commonly referred to as “inert,” these rounds have a core composed of sand or concrete with no energetic material (no explosive core or propellant), although they may have a fuze (a detonating device) with a small amount of explosive material, a sensor, or other items for testing.

**Live Rounds:** Composed of energetic material, plus an outer casing, fragmentation material, a fuze, sensors, timers, or other items for testing.

**Noise:** Sound resulting from outdoor Naval Surface Warfare Center Dahlgren Site (NSWCDL) Research, Development, Test and Evaluation (RDT&E) and ordnance treatment operations.

**Operations:** Gun firing(s), detonations, Railgun projectile launches or other RDT&E actions conducted in accordance with applicable Standard Operating Procedures (SOPs).

**Rapid Fire:** Gun firing of multiple rounds, one after the other, delivered in a continuous stream.

### **Sensitive Surface Areas:**

- Towns, communities, and populated areas external to Naval Support Facility (NSF) Dahlgren. Examples include Cobb Island, Colonial Beach, and Swan Point.
- Base Operating Support (BOS) areas serving the community within NSF Dahlgren. Examples include Morale, Welfare, and Recreation (MWR) facilities, housing, the medical clinic, and schools.
- Does not include NSWCDL occupational functions performed at NSF Dahlgren. These functions are addressed by Occupational Safety and Health (OSH) regulations and NSWCDL guidance and requirements.

**Test Engineer:** Person responsible for planning and executing an operation.

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## **References**

(a) Memorandum of Agreement (MOA) between Commanding Officer, Naval Support Activity South Potomac (NSASP) and Commander, Dahlgren Division, Naval Surface Warfare Center (NSWCDD), 20 JUN 08.

(b) NSWCDL Instruction (NSWC DLINST) 5726.1A, Community Inquiries or Complaints Related to Test Range Operations and Ordnance-Related Noise and Damage, 20 JUN 08.

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## **1.0 Background**

Naval Surface Warfare Center Dahlgren Site's (NSWC DL's) mission is to provide Research, Development, Test and Evaluation (RDT&E), engineering, and fleet support for surface warfare, surface ship combat systems, ordnance, and strategic systems. NSWC DL also provides system integration and certification for weapons, combat systems, and warfare systems.

NSWC DL understands that noise is a significant aspect of mission-related operations. Since 1975, in an effort to reduce noise complaints from surrounding communities, NSWC DL has used the Sound Intensity Prediction System (SIPS) to predict noise impacts to sensitive surface areas prior to gunfire RDT&E and ordnance treatment operations. These noise predictions have helped NSWC DL decide whether to go forward with an operation or wait until conditions provide more favorable predicted noise levels at sensitive surface areas.

## **2.0 Noise Management**

In addition to using SIPS, NSWC DL also takes the following actions to reduce noise impacts:

- **Scheduling** – Whenever possible, RDT&E and ordnance treatment operations are conducted during normal business hours. Operations are conducted year-round, Monday through Friday, normally from 8 am to 5 pm.
- **Public relations** – In accordance with references (a) and (b), the Naval Support Facility (NSF) Dahlgren Public Affairs Office (PAO) along with the NSWC DL PAO closely monitors and records any complaints involving noise and vibration.<sup>1</sup> NSWC DL maintains a website that provides: the Range Schedule; a toll-free Range/Weapons Testing hotline for daily information on range operations and test schedules; a toll-free number for noise comments and questions; and the local number for the NSWC DL PAO. In addition, the NSF Dahlgren PAO maintains a list of citizens that have requested notification when predicted noise levels will be greater than normal. For example, advanced notice is provided prior to firing live rounds and, in some cases, Blind Load and Plug (BL&P) rounds from the 76 millimeter (mm) rapid fire gun and 5" or larger guns.
- **Noise Measurements** – Various noise monitoring sites are located along the Potomac River Test Range (PRTR) (See Figure 1). Noise meters have been installed at these locations to: measure noise levels during operations, provide quantitative data for improving the SIPS prediction model, and determine whether noise levels at sensitive surface areas are acceptable to continue the operation. Handheld noise meters are used to supplement previously-installed noise meters.

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<sup>1</sup> NSWC DL is a tenant upon NSF Dahlgren.

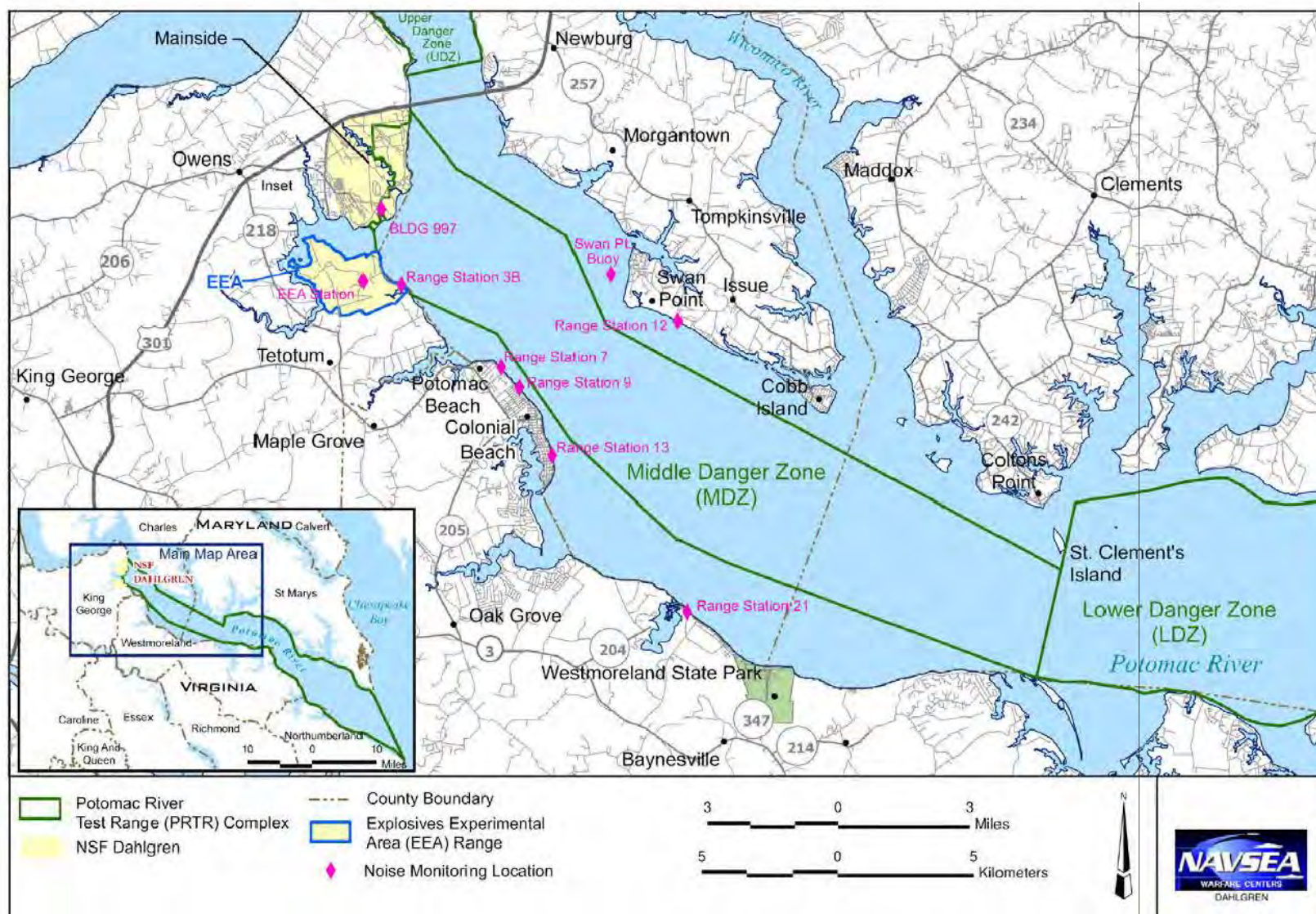


Figure 1 - Noise Monitoring<sup>2</sup>

<sup>2</sup> Figure 1 adapted from NSWCDL Draft Environmental Impact Statement, Figure 3.5-1 Peak Noise Measurement Locations.



### 3.0 Operation Decisions

RDT&E and ordnance treatment operations could cause significant noise impact to the surrounding sensitive surface areas. As a result, NSWCDL integrates noise consideration into these operations.<sup>3</sup> Deciding whether or not to proceed with an operation given the potential noise impact follows the process shown in Figures 2 through 6 and described below. If needed, modifications will be made to this Manual as described in section 4.0.

#### 3.1 Operational Assessment

SIPS analysis is required when one or more of the following operations applies:

- Gunfire (other than Railgun operations):
  - Single shot (or single shots) from a 5-inch or larger gun
  - Live rounds with a caliber great than or equal to 57 mm
  - Rapid fire from a 76 mm or larger gun
- Open detonation:
  - Net Explosive Weight (NEW) of 30 pounds (lbs) or more.<sup>4</sup>
  - Fast and Slow Cook-Off tests are excluded from SIPS analysis.

Other noise-generating RDT&E will be evaluated on a case-by-case basis; for example, Railgun operations do not require SIPS analysis.

---

<sup>3</sup> Noise from open burning of Department of Transportation (DOT) class 1.3 or lower gun propellant is not addressed by this Noise Program Manual. This material does not detonate and instead burns with only negligible noise.

<sup>4</sup> If the NEW for an Explosive Hazardous Waste (EHW) treatment exceeds 200 lbs, the ordnance will be earth-covered prior to treatment. SIPS is not required.

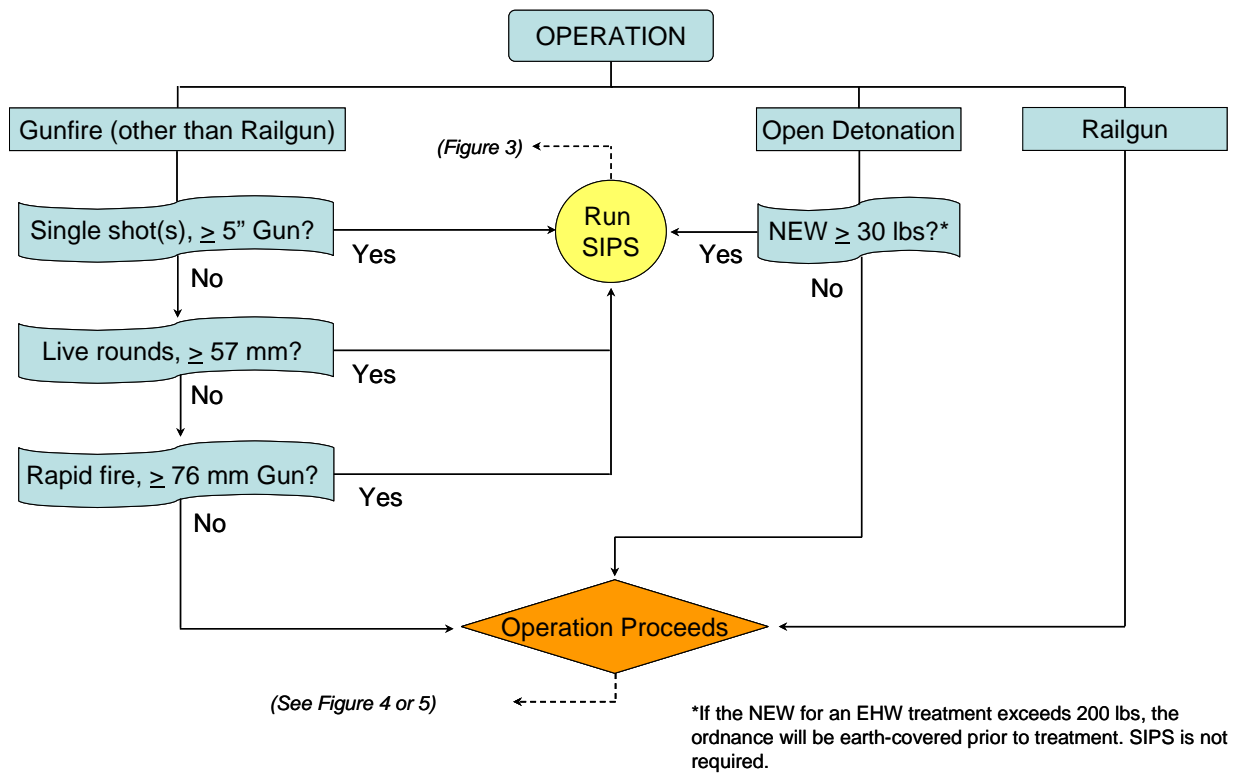


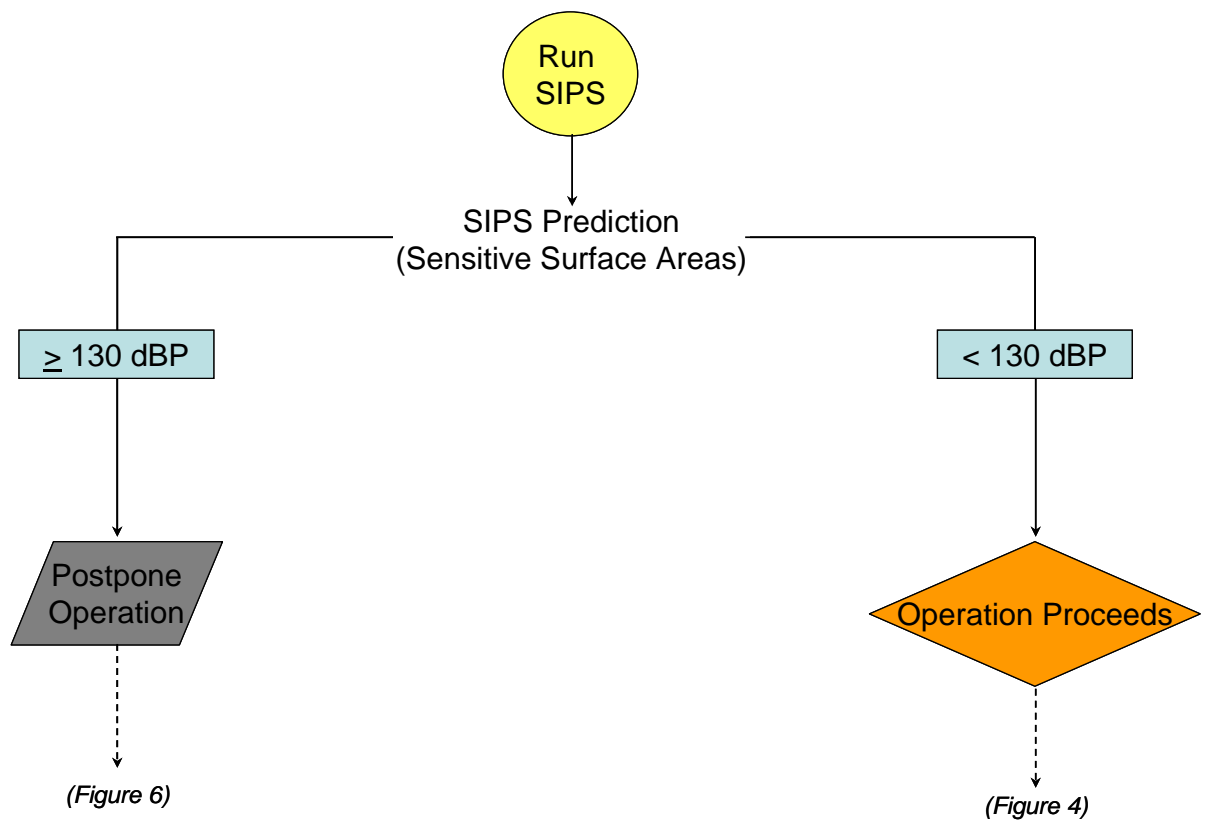
Figure 2 - Operational Assessment<sup>5</sup>

### 3.2 SIPS Decision

As shown in Figure 3, if SIPS analysis is required, the decision to proceed depends on the predicted sound intensity at sensitive surface areas:

- If the sound intensity is predicted to be less than 130 decibels peak (dBp), then the operation may proceed
- If the predicted sound intensity is greater than or equal to 130 dBp, then the operation is postponed.

<sup>5</sup> Noise-generating RDT&E operations not provided in Figure 2 will be evaluated on a case-by-case basis.



**Figure 3 - SIPS Decision**

### 3.3 Operation      Proceeds

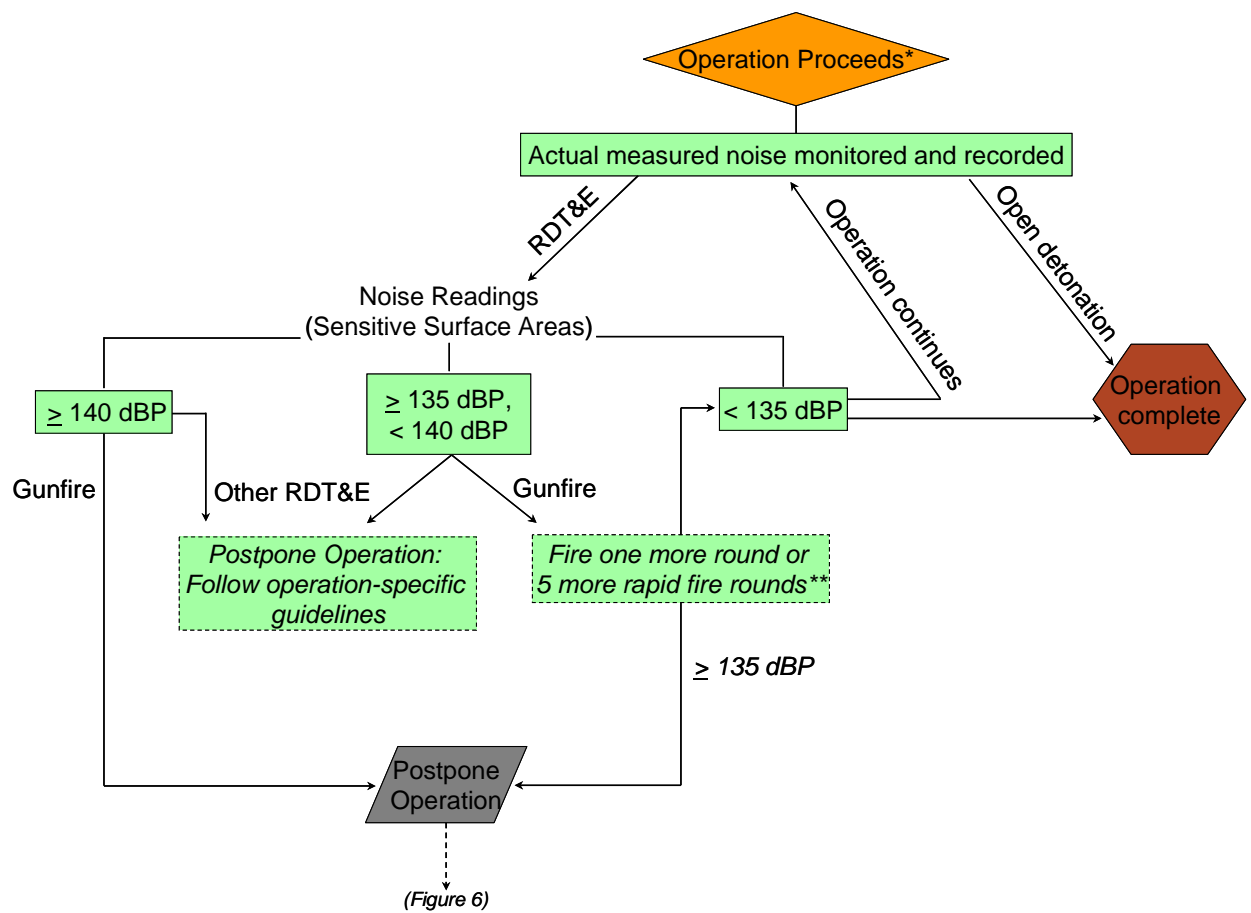
When proceeding with a noise-generating RDT&E or ordnance treatment operation, actual measured noise levels will be monitored and recorded throughout the operation.

- For safety reasons, open detonations will proceed to completion.
- Gunfire operations (other than Railgun) are dependent on actual noise meter data collected at range stations near sensitive surface areas for each shot or 5 rapid fire rounds.
  - If the actual measured noise level is less than 135 dBP, then the operation will proceed as shown in Figure 4.
  - If the actual measured noise level is greater than or equal to 135 dBP and less than 140 dBP, the gun will fire one more round or 5 more rapid fire rounds.<sup>6</sup> Upon firing the additional round or rounds:
    - If the resulting actual measured noise level is greater than or equal to 135 dBP, see figure 6.
    - If the resulting actual measured noise level is less than 135 dBP, see Figure 4.
  - If the actual measured noise level meets or exceeds 140 dBP, see figure 6.
- Railgun RDT&E operations will continue if the actual measured noise level at the Montana shelter is less than or equal to 140 dBP and the actual measured noise level at the Swan Point buoy is less than or equal to 135 dBP, as shown in Figure 5. Otherwise:
  - If the measured noise level at the Swan Point buoy exceeds 135 dBP, operations will be postponed for the remainder of the day.
  - If the measured noise level at the Montana shelter exceeds 140 dBP, but the level at the Swan Point buoy does not exceed 135 dBP, a waiver may be granted, allowing the operation to continue.
- Other noise-generating RDT&E operations will continue if the actual measured noise level remains below 135 dBP. Otherwise, these operations will be postponed as shown in Figure 4.

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<sup>6</sup> If necessary (the operation may be complete at this point).

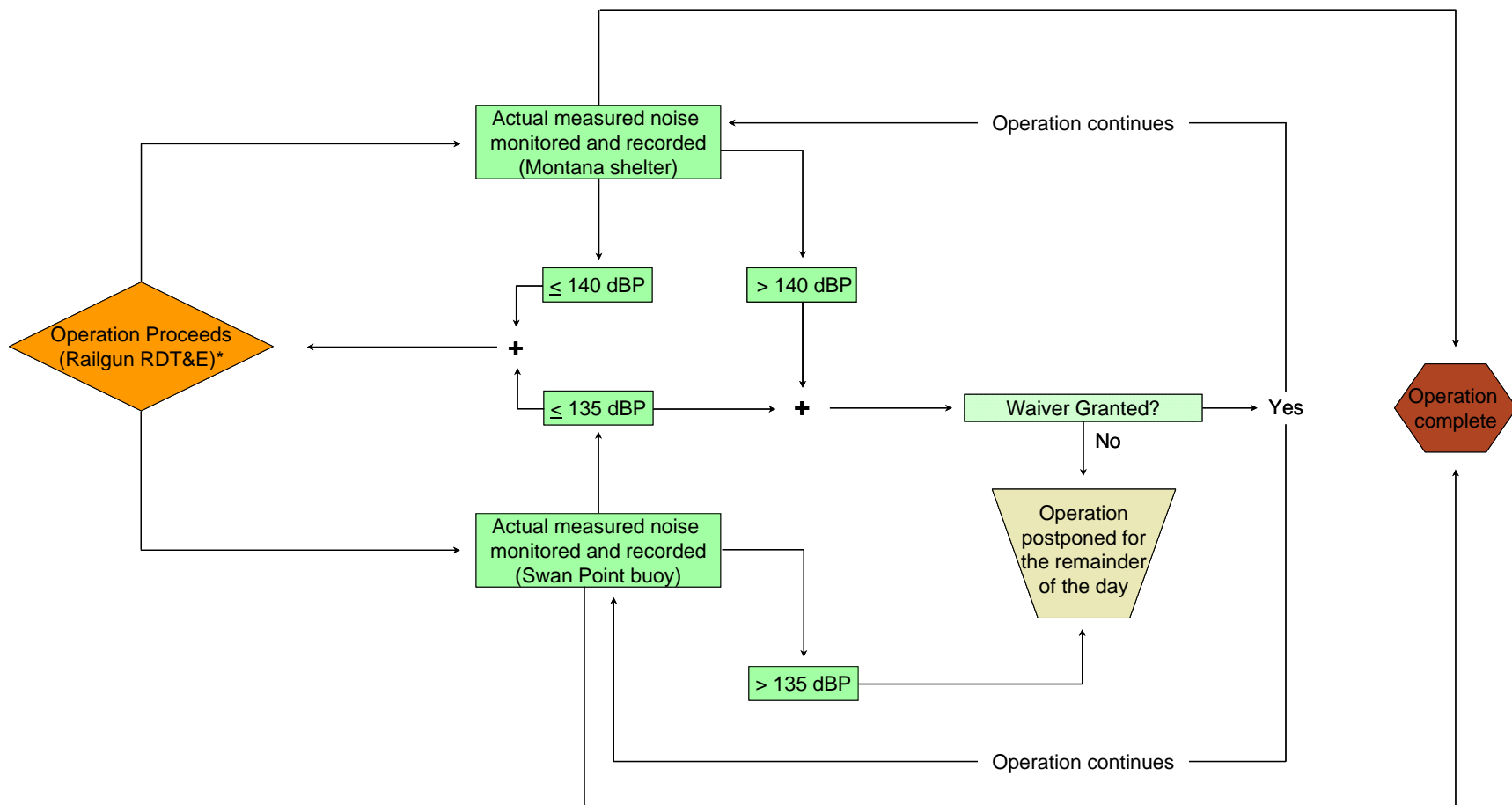




\*Does not include Railgun operations (for Railgun operations, see Figure 5).

\*\*Only necessary if operation has not been completed.

**Figure 4 - Operation Proceeds**



\*For operations other than Railgun, see Figure 4.

**Figure 5 - Railgun Operations**

### **3.4 Operation      Postponed**

#### **3.4.1    *Railgun***

For Railgun operations, if the actual measured noise level exceeds 140 dB at the Montana shelter but does not exceed 135 dBP at the Swan Point buoy, a waiver may be granted to continue operations. However, operations will be postponed for the remainder of the day (no waiver granted) once the measured noise at the Swan Point buoy exceeds 135 dBP (see Figure 5).

#### **3.4.2    *Gunfire and Open Detonation***

As shown in Figure 6, when a gunfire operation (other than Railgun) or an open detonation operation is postponed, additional SIPS analysis may be conducted until more favorable conditions are available.<sup>7</sup> Otherwise, the supervising Division Head is notified. The Division Head will either concur with the decision to postpone or will grant a waiver, allowing the operation to continue. Waivers may be granted when an operation is critical; however, they cannot be applied if SIPS predictions or actual measured noise at sensitive surface areas meet or exceed 140 dBP.

In the event of a waiver, the following actions are taken:

- The waiver is documented. The Division Head either drafts and signs the waiver or provides the waiver by email to:
  - Range Control
  - The Test Engineer
  - The Safety & Environmental Office
- The operation proceeds to completion—actual measured noise levels for each shot are monitored and recorded. If any measured noise meets or exceeds 140 dBP, the operation is again postponed and the procedure shown in Figure 6 starts over.

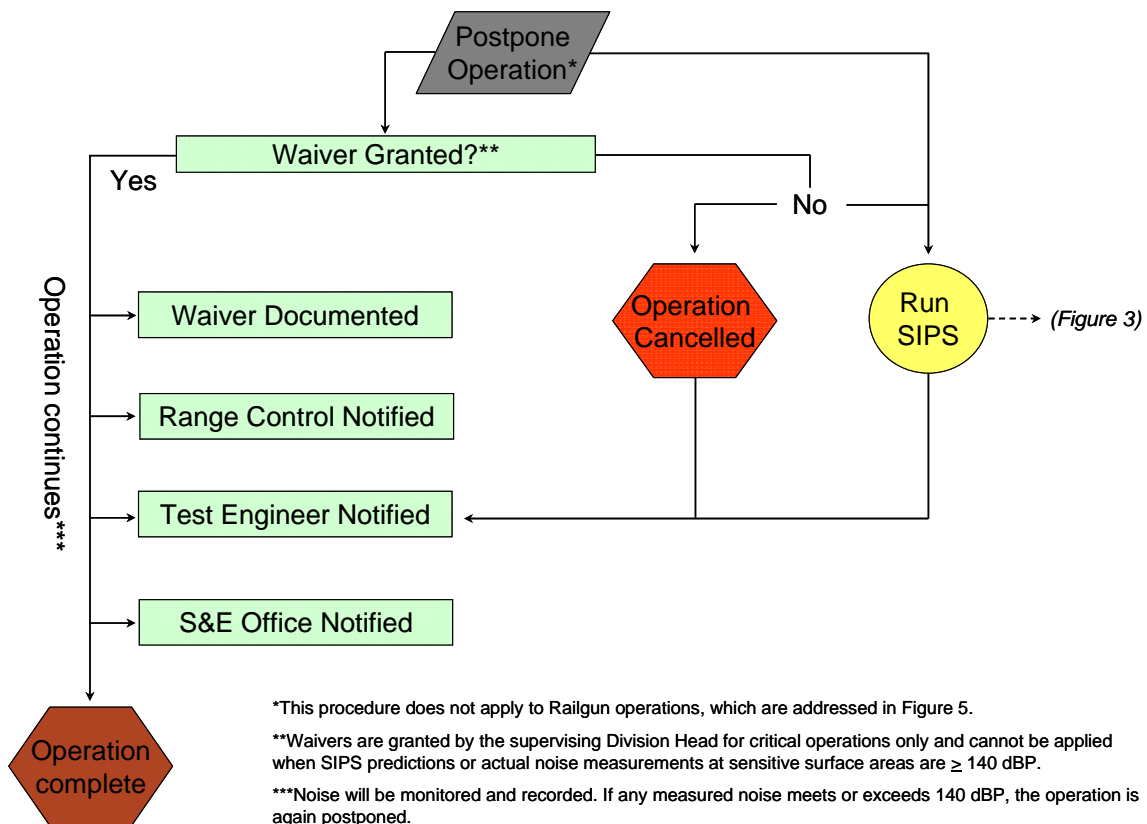
If a waiver is not granted, the operation will either be cancelled or delayed and the Test Engineer so notified. Unless cancelled, the operation will be delayed until more favorable conditions are available, as verified by running SIPS again and following the guidelines previously described.

#### **3.4.3    *Other Noise-Generating RDT&E***

Postponement procedures specific to other noise-generating RDT&E operations will be determined on a case-by-case basis, as shown in Figure 4. If necessary, this manual will be updated as described in section 4.0.

---

<sup>7</sup> SIPS analysis is applicable as described in sections 3.1 and 3.2.



**Figure 6 - Operation Postponed**



#### **4.0 Outdoor Noise Management Process Manual Changes**

Due to the dynamic nature of RDT&E and ordnance treatment, periodic changes to this manual may be needed. If noise impacts fail to be addressed sufficiently (as identified by increased noise complaints or program-specific needs), the NSWCDL Safety & Environmental Office, affected Division Heads, and, where applicable, Range Safety will work together to revise the manual and implement appropriate changes.

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## **APPENDIX D**

### **NOISE AND VIBRATION MEASUREMENTS AT SIX HISTORIC STRUCTURES**

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# Noise & Vibration Measurements

at Six Historic Structures

Naval Surface Warfare Center  
Dahlgren Laboratory  
Dahlgren, Virginia  
**December 2010**



Statement A: Approved for Public Release; Distribution is Unlimited.



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# Noise and Vibration Measurements At Six Historic Structures

Naval Surface Warfare Center  
Dahlgren Laboratory

Dahlgren, Virginia

December 2010

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11	Waverley House Measurement Setup.....	D-16
12	Stratford Hall Setup .....	D-16



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## ACRONYMS AND ABBREVIATIONS

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APE	Area of potential effect
ARL	Air Resources Laboratory
dB	decibel(s)
dBp	peak decibel(s)
DoD	Department of Defense
EIS	environmental impact statement
in/sec	inches per second
lb(s)	pound(s)
mph	miles per hour
NDE	Non-destructive evaluation
NOAA	National Oceanic and Atmospheric Administration
NSF	Naval Support Facility
NSWCDL	Naval Surface Warfare Center, Dahlgren Laboratory
PPV	peak particle velocity
PRTR	Potomac River Test Range
SHPO	State Historic Preservation Officer
US	United States
yd	yard

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## 1 INTRODUCTION

Naval Surface Warfare Center, Dahlgren Laboratory (NSWCDL) conducted a noise and vibration measurement program on November 16 and 17, 2009 at six historic structures located near the Navy's Potomac River Test Range (PRTR). Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties. The purpose of the measurement program was to determine noise and vibration effects on historic structures from firing a large-caliber gun with high-explosive projectiles.

NSWCDL is located on Naval Support Facility (NSF) Dahlgren in Dahlgren, Virginia. The PRTR extends along the lower 53 miles of the Potomac River (Figure 1). The historic structures were located at various distances from the gun firing point (Figure 2).

The noise and vibration measurement program took place during already-scheduled tests. Noise measurements were taken during this particular group of tests because NSWCDL was firing the largest gun routinely fired on the PRTR – the 5"/62 caliber gun – with projectiles that contained the largest amount of detonation explosives typically used – approximately 9 pounds (lbs) net explosive weight. Noise and vibration levels resulting from both the explosive charge used to propel the projectiles as a gun is fired and the explosive detonation at the target impact area on the river were expected to be the greatest experienced in 2009. There were no foreseeable tests with more projectile net explosive weight. Further, these tests used an unusually large number of target impact areas – five – at distances varying from 5,300 yards (yd) to a maximum range of 25,700 yd down the Potomac River (Figure 2), which allowed measurement of projectile detonation noise from different target areas.

Because measurements were taken during the testing of one of NSWCDL's largest guns using explosive projectiles firing at five different target areas along the river, these tests provide a rigorous basis for noise and vibration analysis at various sensitive locations along the PRTR.

## 2 TEST PROGRAM

The noise and vibration measurement program was carried out on the first two days of a week-long series of gun ballistics tests, the purpose of which was to test explosive replacement types for United States (US) Navy ships. Explosive projectiles were fired down the PRTR from a 5"/62 caliber gun (Figure 3) located at the AA Fuze Range on NSF Dahlgren. Accurate projectile initial velocity data, time of flight, projectile trajectory, and projectile impact coordinates were collected as part of the tests. Table 1 lists the firing angle and target distance from gun of the projectiles fired into each of the five range target areas.

Noise and vibration levels were measured at the six selected historic structures on Monday, November 16 and Tuesday, November 17, as described in Section 4.

# Location of Naval Support Facility (NSF) Dahlgren



• County Seat

Naval Support Facility (NSF) Dahlgren

Potomac River Test Range (PRTR)

25 0 25  
Miles

40 0 40  
Kilometers



Source: NSWCDL GIS (2008 - 2011); Danger Zones defined in 33 CFR § 334.230.

Figure 1

# Selected Historic Structures, Measurement Sites, and Target Areas

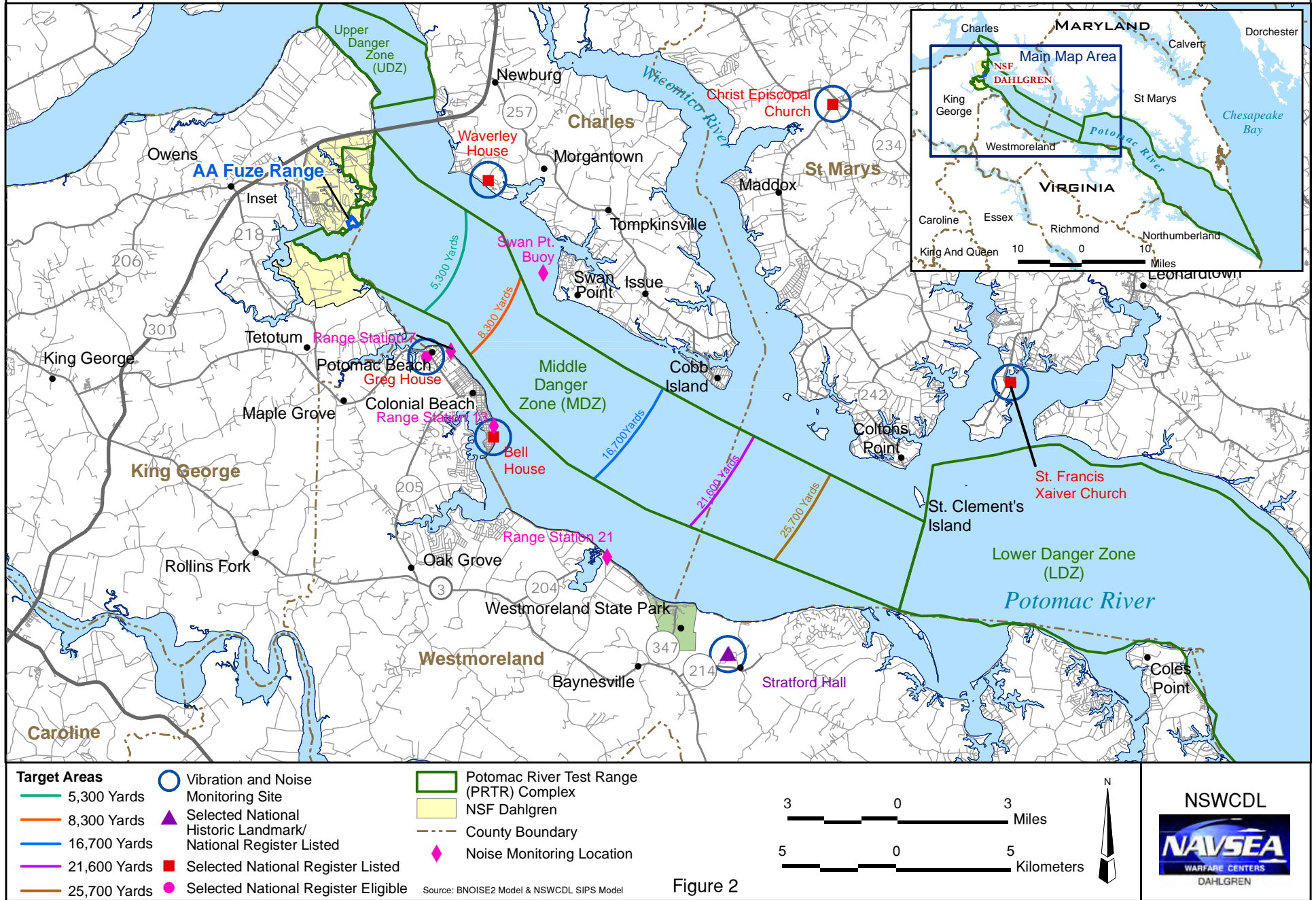


Figure 2



**Table 1**  
**Ballistic Predictions**

Firing Angle (Degree)	Estimated Range Target (Yards)
2.5	5,300
4.5	8,300
15	16,700
26	21,600
43	25,700

**Figure 3**  
**5"/62 Caliber Gun Used for Testing**



### 3 VIBRATION AND NOISE FUNDAMENTALS

The low-frequency impulse sound pressure generated by the detonation of explosive charges or large-caliber gun firing can cause structures to vibrate. Vibration is an oscillatory motion (back and forth), which can be described in terms of displacement, velocity, or acceleration. For a vibrating wall, displacement is simply the distance that a point on the wall moves away from its static position. Velocity represents the instantaneous speed of the wall movement, and acceleration is the rate of change of the speed. Because of the nature of oscillatory motion, a structure can only physically vibrate in a low-frequency range – typically below 80 hertz. Consequently, only the low-frequency component of sound pressure can cause a structure to vibrate.

The occupants of a vibrating structure often perceive vibration as the rattling of loose windows and objects on shelves, and sometimes of the structure itself. Since structural vibration is caused by low-frequency sound pressure, the evaluation of structural vibration effects caused by gun firing and projectile detonation focuses on low frequency sound pressure levels, in contrast to high frequency levels that would be heard more easily by people.

Several different methods can be used to quantify the amplitude or extent of vibrations. The method selected for this noise and vibration measurement program uses peak particle velocity (PPV), in inches per second (in/sec), to measure the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in the measurement of blasting vibration because it bears a relationship to the stresses that are experienced by structures.

There are two types of vibration, as described in the following sections:

- Vibration transmitted through the ground (ground-borne vibration).
- Vibration transmitted through the air (airborne vibration).

#### 3.1 Ground-borne Vibration

The shaking of houses and other structures is commonly attributed to ground-borne vibration. Ground-borne vibration originates from an event – such as an earthquake or a detonation – that radiates vibration energy through the ground. When the energy reaches a structure, the face of the nearest foundation or underground structural wall responds to the ground-borne vibration and spreads waves of energy throughout the structure. The amount of structural vibration from ground-borne vibration is a function of the:

- Magnitude of the energy source.
- Distance from the source.
- Response characteristics of the transmitting media (rock and soil).
- Response characteristics of the structure itself – different kinds of construction materials react differently to vibration as can be observed after earthquakes when structures built of concrete have collapsed while structures with more flexible metal structures have survived.

Ground-borne vibration dominates structural vibration close to the source while airborne vibration dominates at greater distances (Siskind et al., 1989).

For example, The US Bureau of Mines found that for a 100-lb detonation, ground-borne vibration was the dominant cause of building vibration if the building was located less than 500 feet from the detonation point. At distances greater than 500 feet, airborne sound wave was the dominant cause of the vibration (Siskind et al., 1989).

The US Bureau of Mines recommends in its report entitled *Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting* (Siskind et al., 1989) that:

- A PPV of 0.5 in/sec is the maximum ground-borne vibration threshold to prevent damage.
- A PPV of 2.0 in/sec is the threshold level for ground-borne vibration at which minor structural damage may begin to occur in 0.01 percent of structures (or 1 structure in 10,000).

### 3.2 Airborne Vibration

Airborne sound volume is measured in decibels (dB). Decibels are measured on a logarithmic scale that reflects how human hearing works. In simple terms, each increase of 10 dB is perceived as being twice as loud; therefore, a vacuum cleaner at 70 dB would seem twice as loud as normal conversation at 60 dB. A nightclub at 110 dB would seem 32 times as loud as normal conversation.

Airborne vibration can cause structural shaking and window rattling, which can concern and annoy occupants. More powerful airborne vibrations can break glass panes and crack plaster. Very powerful airborne vibrations can damage a building's superstructure. A US Bureau of Mines study, *Structure Response and Damage Produced by Airblast from Surface Mining* (Siskind et al., 1980), correlated airborne vibration levels from the use of explosives with the peak sound pressure levels likely to cause potential structural damage. As described in Table 2, homeowners became concerned about structural damage at peak sound levels measured in peak decibels (dBP) of 120 dBP, which is far below levels actually capable of causing such damage. The NSWCDL Noise Management program works to manage peak airborne noise levels at sensitive surface areas from gun firing and projectile detonations on the PRTR. Before a 5" gun is fired, a model is used to predict peak noise levels at sensitive surface areas based on weather conditions. If the model-predicted noise level is less than 130 dBP at sensitive surface areas, then the firing proceeds. When and if the noise level measured at the range stations is greater than or equal to 135 dBP for two consecutive firings, then further testing is postponed.

The correlations listed in Table 2 provide a general picture of the relationship between vibration levels and peak sound level. The actual correlation is dependent on the specific structure type and condition. The worst case – a structure likely to sustain damage from vibration – is one with poorly-fitted, loose window glass and walls already cracked or stressed by structural settling and/or deterioration, for example as the result of age, prior leaks, or storm damage.

**Table 2**  
**Typical Response to Airborne Vibration Levels**

Response	Vibration Level in inches per second (in/sec)	Peak Decibels (dBP)
Concern by homeowner about structural rattling and possible damage	0.1	120
Glass and plaster cracks (worst case*)	0.5	134
Gypsum wallboard (worst case*)	0.75**	141**
Structural damage to lightweight superstructure	>2.0**	175**
<p>* Worst case = Poorly fitted, loose window glass and/or, walls already under stress through structural settling, deterioration, age, or earlier damage.  Source: Siskind et al., 1980.</p> <p>** NSWCDL's noise management program aims to manage peak noise levels in order to keep them below 135 dBP.</p>		

## 4 SELECTION OF HISTORIC STRUCTURES FOR VIBRATION AND NOISE MEASUREMENTS

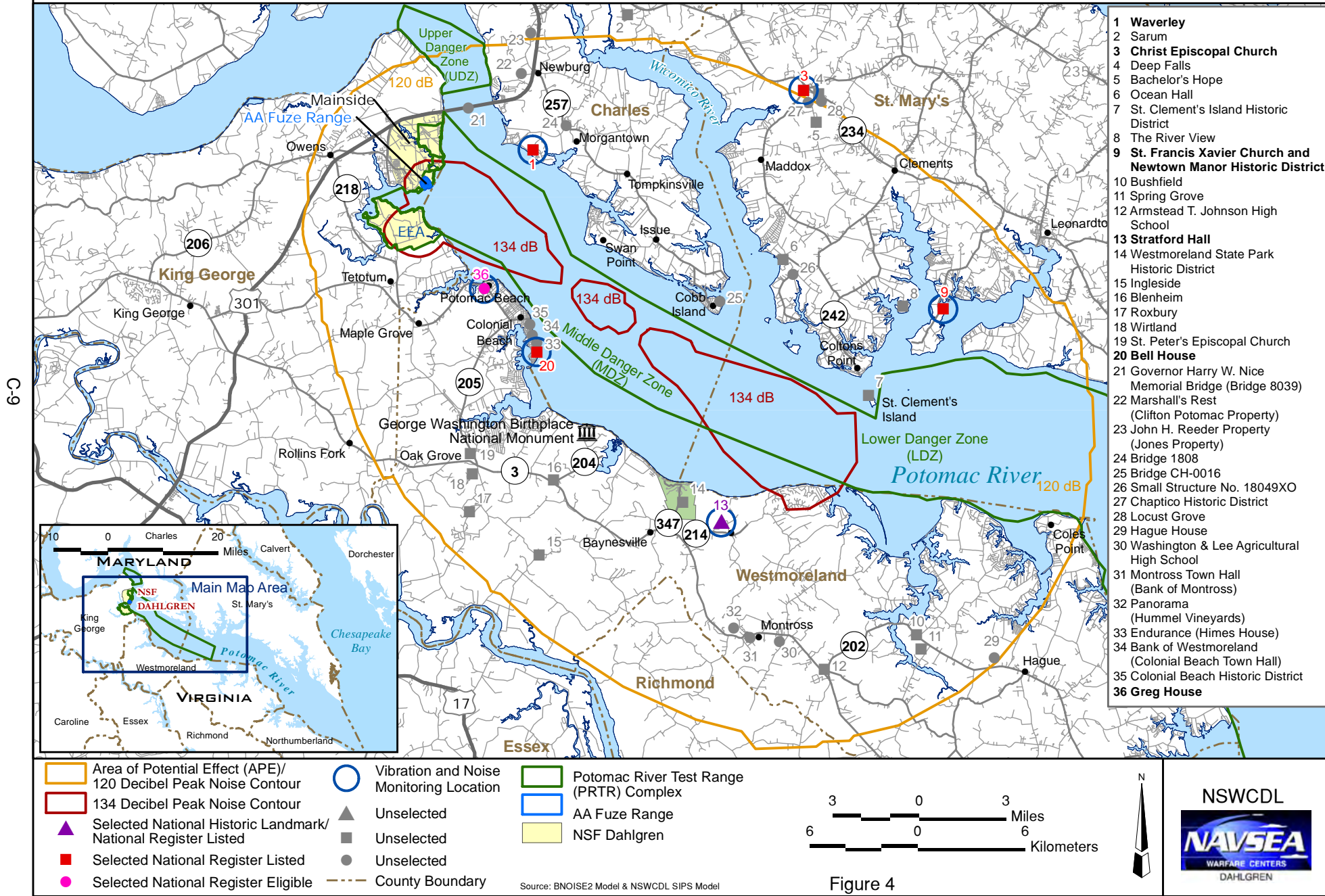
The process of selecting historic structures for measuring ground-borne and airborne noise and vibration during the November 2009 test program was as follows:

1. Historic structures within an Area of Potential Effect (APE) were candidates for vibration and noise measurement. As part of the environmental impact statement (EIS) and accompanying Section 106 process that NSWCDL is conducting for future outdoor research, development, test and evaluation activities outdoors, an APE for historic structures was defined based on noise modeling that predicts the extreme worst case condition for gun noise. This APE was agreed upon by the Maryland and Virginia State Historic Preservation Officers (SHPOs). The APE and predicted peak noise levels are illustrated on Figure 4. Historic structures close to either the gun firing or target impact detonation areas were selected (Figure 2) to maximize the potential vibration and noise impact. Three structures were selected along the Maryland shore and three along the Virginia shore to ensure representative coverage of the affected areas.
2. Only historic structures of national significance were candidates for vibration and noise measurement. Five of the six historic structures selected are listed on the National Register of Historic Places, and one structure is eligible for listing on the National Register.
3. Christ Episcopal Church in Chaptico, Maryland, which is listed on the National Register, was selected for noise and vibration measurement based on a request from members. The members expressed concerns that NSWCDL's large-caliber gun firings could be the source of cracks developing in the front of their historic church.
4. The six historical structures were selected to represent a range of construction types and ages in order to assess whether vibration and noise impacts vary with these factors. The historic structures selected date from the 17<sup>th</sup>-18<sup>th</sup> Century to the early 20<sup>th</sup> Century; building types varied from brick to wood siding.

Table 3 describes the selected structures, their National Register status, and their location relative to the Potomac River/PRTR. Figure 4 illustrates the APE, predicted peak noise levels (which formed the basis for the APE delineation), the location of the historic structures selected for measurement, and the location of other historic structures within the APE. Photographs of the historic structures are provided in Figures 5 through 10.



# Area of Potential Effect, Predicted Peak Noise Levels, and Selected Historic Structures



**Table 3**  
**Historic Structures Selected for Noise & Vibration Measurement**

Number on Figure 3	Structure Name	Location	Status	Justification
1	Waverley House	Waverly Point Road Newburg Charles County, MD	National Register-listed, 1987	Example of an architecturally significant 18 <sup>th</sup> -century brick residence. Structure is located along the Potomac River close to Dahlgren.
3	Christ Episcopal Church	Church: 25390 Maddox Road Chaptico St. Mary's County, MD	National Register-listed, 1994	Example of an architecturally significant 18 <sup>th</sup> -century brick church. Complaints received from church occupants.
9	Newtown Manor House (St. Francis Xavier Church & Newtown Manor Historic District)	Newtown Neck Road (Maryland State Route 243) Leonardtown St. Mary's County, MD	National Register-listed, 1972	Two-story, rectangular-plan brick house capped by side-gable roof with paired chimneys at each gable end. Circa 17 <sup>th</sup> -century, early 18 <sup>th</sup> -century.  Structure is located along the Potomac River.
13	Stratford Hall	Great House Road Stratford Westmoreland County, VA	National Historic Landmark/ National Register-listed, 1966	Excellent example of an 18 <sup>th</sup> -century, Georgian-style, brick plantation house. Stratford Hall is one of Virginia's most significant historic architectural resources.  Structure is located near the Potomac River; plantation house is set back from the river and screened by mature trees.
20	Bell House	821 Irving Avenue Colonial Beach Westmoreland County, VA	National Register-listed, 1987	Example of an architecturally significant, 19 <sup>th</sup> -century, Stick-style frame house.  Structure is located along the Potomac River.
36	Greg House	1763 McKinney Boulevard, Colonial Beach Westmoreland County, VA	National Register-eligible, 2008	Example of an architecturally significant 1920s-era frame bungalow.  Structure is located along the Potomac River close to Dahlgren.

**Figure 5**  
**Waverley House (#1)**



**Figure 6**  
**Christ Episcopal Church (#3)**





**Figure 7**  
**Newtown Manor House at St. Francis Xavier Church (#9)**



**Figure 8**  
**Stratford Hall (#13)**



**Figure 9**  
**Bell House (#20)**



**Figure 10**  
**Greg House (#36)**





## 5 VIBRATION AND NOISE MEASUREMENTS

To measure the noise and vibration effects of the tests on the six historic structures, noise specialists affixed sensors to the structures and grounds. Noise and vibration levels were recorded each time the 5"/62 gun was fired and also when the projectile detonated in the target area within the PRTR.

Vibration measurements were collected from a sensor placed on a wall on each structure. These measurements assessed the potential impact caused by airborne sound pressure from both the gun firing and the projectile detonation impact areas. Peak airborne sound pressure levels were measured immediately adjacent to the structures. In addition to vibration measurements on structure walls, ground-borne vibration levels in soil and on structure foundations were measured at Waverley House, Stratford Hall, and Bell House. These three structures were selected for ground and foundation instrumentation because of their location in relation to the Potomac River and their structure type. These three structures were expected to experience the greatest vibration from the tests.

As described previously, structural vibration is caused by lower frequency sound pressure levels, hence seismic accelerometers sensitive to low frequency signals were used to measure vibration. To measure airborne vibration effects on walls, a low frequency seismic accelerometer was attached perpendicularly to a wall at each of the six monitored structures. Table 4 lists the types of measurements taken at each of the six structures. Figures 11 and 12 show the sample equipment set up at Waverley House and Stratford Hall, respectively.

**Table 4**  
**Types of Vibration and Noise Measurements at Each Structure**

Number on Figure 4	Structure Name	Type of Measurement
1	Waverley House	Ground-borne soil vibration and peak sound level. Foundation and exterior wall vibration.
3	Christ Episcopal Church	Peak sound level. Interior wall vibration.
9	Newtown Manor House	Peak sound level. Exterior wall vibration.
13	Stratford Hall	Ground-borne soil vibration and peak sound level. Foundation and exterior wall vibration
20	Bell House	Ground-borne soil vibration and peak sound level. Foundation and front exterior wall vibration. Peak sound level. Side exterior wall vibration.
36	Greg House	Peak sound level. Exterior wall vibration.

**Figure 11**  
**Waverley House Measurement Setup**



**Figure 12**  
**Stratford Hall Setup**



## 6 MEASUREMENT PROGRAM RESULTS

The results of the measurement program at each of the six historic structures are summarized in the following tables:

- Table 5, Peak Airborne Noise Levels. Minimum, mean, and maximum peak noise levels expressed in peak decibels (dBP) are presented along with the number of measurements or events in three noise categories (< 115 dBP, 115 dBP – 130 dBP, > 130 dBP).
- Table 6, Wall Vibration Levels. Minimum, mean, and maximum wall vibrations in inches per second (in/sec) are presented along with the number of measurements in three vibration categories (<0.1 in/sec, 0.1 – 0.5 in/sec, > 0.5 in/sec).
- Table 7, Ground and/or Foundation Vibration Levels. Minimum, mean, and maximum wall vibrations in in/sec are presented along with the number of measurements in three vibration categories (<0.1 in/sec, 0.1 – 0.5 in/sec, > 0.5 in/sec).

### 6.1 Variability of Airborne Noise and Vibration Measurements

Although each projectile fired weighed the same and contained about the same amount of explosives, the airborne noise measurements recorded at each historic structure varied from shot to shot. The reasons for these variations are differences in physical and atmospheric conditions as follows:

- The location of the projectile detonation in relation to the river's surface – above, at, or below the water surface.
- Weather conditions. For example, weather conditions that can enhance peak noise at downwind sites include: steady winds of 5-10 miles per hour with gusts of greater velocities in the direction of the measuring site; a clear day with layering of smoke or fog; a cold, hazy or foggy morning; low cloud cover; a day following a day with large extremes of temperature between night and day; or high barometer readings with low temperatures.
- Type and condition of the structure subjected to noise. For example, wooden frame structures and plaster and lath walls tend to be easily rattled, as compared to solid concrete walls, which can sustain much higher airborne and ground-borne vibration levels. Different structures or parts of a structure also respond to vibration impact differently.

The major contributor to variations in airborne noise levels during the test period was changes in weather conditions. Personnel at Stratford Hall observed that the noise and vibration levels increased after noise measurement stopped at 2 pm on Tuesday, November 17, and continued to be higher on Wednesday (P. Mark, personal communication. November 19, 2009).

According to National Oceanic and Atmospheric Administration (NOAA) Air Resources Laboratory (ARL) weather measurements and modeling for the longitude and latitude of the

middle of the PRTR firing area (NOAA ARL, 2010), weather conditions on the two days of testing and the day after testing were as follows:

1. Monday, November 16: Winds early in the morning were from the west, shifting to the west-northwest through the morning, to the northwest at noon, and then by 3 pm winds were coming from the north-northeast. Winds speeds were in the 2.2-6.7 miles per hour (mph) range.
2. Tuesday, November 17: Winds were coming from the northeast early in the morning at 2.2-6.7 mph and then shifted to the east-northeast at noon. At noon, the winds picked up to the 8.9-13.4 mph range, and high cloud cover, which had varied in the morning, became complete.
3. Wednesday, November 18: Winds shifted from northeast early in the morning, to east-northeast by 9 am and east at noon. Like Tuesday, winds, which were 2.2-6.7 mph in the morning, picked up at noon Wednesday to the 8.9-13.4 mph range. Partial to complete high cloud cover on Wednesday morning gave way to complete low and high cloud cover by noon.
4. Monday through Wednesday, November 16-18: Air temperatures declined from Monday to Tuesday and increased from Tuesday to Wednesday. Atmospheric pressure rose steadily through the three-day period.

The combination of changes in wind direction, wind speeds, atmospheric pressure, and cloud cover beginning at noon on Tuesday contributed to higher airborne noise levels Tuesday afternoon and Wednesday, based on NOAA's ARL meteorological data. Cloud cover, particularly low cloud cover, reflects some of the low frequency airborne gun firing noise. This reflected sound energy at the point of receipt may have been higher than would normally have been experienced, since part of the energy normally dissipated into the atmosphere, land buffer, or surrounding vegetation could be reflected in a more direct path to the observer and structure. Atmospheric pressure was climbing steadily through the three-day period, which can also enhance peak sound levels.



**Table 5**  
**Airborne Peak Noise Levels**

Site	Firing Distance (yards)	Number of Shots Measured	Noise Level <sup>2</sup> (dBP)			Number of Events		
			Minimum	Mean	Maximum	< 115 dBP	115 – 130 dBP	> 130 dBP
Waverley House	5,300	15	115	117	120	0	15	0
	8,300	10	118	120	122	0	10	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	118	118	118	0	1	0
Christ Episcopal Church	5,300	9	73	86	96	9	0	0
	8,300	7	86	93	100	7	0	0
	16,700	7	82	86	92	7	0	0
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	10	82	88	102	10	0	0
Newtown Manor House	5,300	15	97	102	106	15	0	0
	8,300	4	90	100	107	4	0	0
	16,700	2	103	105	108	2	0	0
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	5	91	100	105	5	0	0
Stratford Hall	5,300	13	86	98	108	13	0	0
	8,300	8	89	100	108	8	0	0
	16,700	8	86	99	107	8	0	0
	21,600	5	110	112	114	5	0	0
	25,700	11	103	106	110	11	0	0
Bell House (Geosonics)	5,300 <sup>1</sup>	-	-	-	-	-	-	-
	8,300 <sup>1</sup>	-	-	-	-	-	-	-
	16,700	9	103	114	122	4	5	0
	21,600	3	105	109	112	3	0	0
	25,700	11	101	106	116	10	1	0
Bell House (B&K 2250)	5,300	14	95	111	126	11	3	0
	8,300	10	103	115	125	5	5	0
	16,700	8	105	114	122	4	4	0
	21,600	5	108	111	115	4	1	0
	25,700	11	102	110	116	10	1	0
Greg House	5,300	15	116	124	129	0	15	0
	8,300	10	116	124	128	0	10	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	120	120	120	0	1	0
Notes: 1. No peak noise measurements were made. 2. Measurements were taken on November 16 and 17, 2009 at all locations except Waverley House and Newtown Manor, which were sampled only on November 16, 2009.								

**Table 6**  
**Wall Vibration Measurements**

Site	Firing Distance (yards)	Number of Shots Measured	Vibration Level <sup>3</sup> (in/sec)			Number of Events		
			Minimum	Mean	Maximum	<0.1 in/sec	0.1 – 0.5 in/sec	>0.5 in/sec
Waverley House (exterior brick wall)	5,300	14	0.039	0.139	0.298	4	10	0
	8300	10	0.059	0.113	0.180	5	5	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	0.059	0.059	0.059	1	0	0
Christ Episcopal Church (interior plaster)	5,300	8	0.001	0.003	0.006	8	0	0
	8,300	7	0.001	0.002	0.005	7	0	0
	16,700	7	0.001	0.003	0.005	7	0	0
	21,600	13	0.001	0.002	0.005	13	0	0
	25,700	10	0.000	0.002	0.006	10	0	0
Newtown Manor House (exterior brick wall)	5,300 <sup>2</sup>	-	-	-	-	-	-	-
	8,300 <sup>2</sup>	-	-	-	-	-	-	-
	16,700	1	0.00003	0.00003	0.00003	1	0	0
	21,600 <sup>2</sup>	-	-	-	-	-	-	-
	25,700 <sup>2</sup>	-	-	-	-	-	-	-
Stratford Hall (exterior brick wall)	5,300	13	0.004	0.012	0.020	13	0	0
	8,300	8	0.006	0.016	0.030	8	0	0
	16,700	9	0.004	0.015	0.037	9	0	0
	21,600	5	0.008	0.039	0.056	5	0	0
	25,700	12	0.001	0.016	0.024	12	0	0
Bell House (exterior front wall)	5,300 <sup>1</sup>	-	-	-	-	-	-	-
	8,300 <sup>1</sup>	-	-	-	-	-	-	-
	16,700	8	0.311	0.399	0.535	0	7	1
	21,600	3	0.086	0.245	0.480	1	2	0
	25,700	12	0.071	0.142	0.354	6	6	0
Bell House (exterior side wall)	5,300	13	0.005	0.037	0.225	12	1	0
	8,300	10	0.003	0.055	0.144	7	3	0
	16,700	7	0.001	0.058	0.144	6	1	0
	21,600	5	0.025	0.039	0.069	5	0	0
	25,700	9	0.017	0.027	0.043	9	0	0
Greg House (exterior front wall)	5,300	15	0.007	0.033	0.056	15	0	0
	8,300	10	0.018	0.030	0.046	10	0	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	0.021	0.021	0.021	1	0	0
Notes: 1. No vibration measurements were made. 2. Levels were too low to be detected. 3. Measurements were taken on November 16 and 17, 2009 at all locations except Waverley House and Newtown Manor House, which were only sampled on November 16, 2009.								

**Table 7**  
**Ground and/or Foundation Vibration Measurements**

Site	Firing Distance (yards)	Number of Shots Measured	Vibration Level <sup>3</sup> (in/sec)			Number of Events (Vibration Levels)		
			Minimum	Mean	Maximum	<0.1 in/sec	0.1 – 0.5 in/sec	>0.5 in/sec
Ground Vibration								
Stratford Hall	5,300	12	0.005	0.005	0.005	10	0	0
	8,300	7	0.005	0.005	0.005	7	0	0
	16,700	8	0.003	0.003	0.005	8	0	0
	21,600	5	0.003	0.005	0.008	5	0	0
	25,700	11	0.003	0.003	0.003	11	0	0
Waverley House	5,300	8	0.005	0.005	0.008	8	0	0
	8,300	8	0.005	0.005	0.008	8	0	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	0.005	0.005	0.005	1	0	0
Bell House	5,300	-	-	-	-			
	8,300	-	-	-	-			
	16,700	1	0.005	0.005	0.005	1	0	0
	21,600 <sup>2</sup>	-	-	-	-	-	-	-
	25,700 <sup>2</sup>	-	-	-	-	-	-	-
Foundation Vibration								
Stratford Hall	5,300	12	0.0001	0.0003	0.0005	12	0	0
	8,300	8	0.0001	0.0002	0.0003	8	0	0
	16,700	9	0.0001	0.0005	0.0011	9	0	0
	21,600	5	0.0002	0.0010	0.0025	5	0	0
	25,700	12	0.0001	0.0002	0.0006	12	0	0
Waverley House	5,300	14	0.005	0.009	0.018	14	0	0
	8,300	10	0.004	0.006	0.008	10	0	0
	16,700 <sup>1</sup>	-	-	-	-	-	-	-
	21,600 <sup>1</sup>	-	-	-	-	-	-	-
	25,700	1	0.005	0.005	0.005	1	0	0
Bell House	5,300 <sup>1</sup>	-	-	-	-	-	-	-
	8,300 <sup>1</sup>	-	-	-	-	-	-	-
	16,700	8	0.003	0.006	0.012	8	0	0
	21,600 <sup>2</sup>	-	-	-	-	-	-	-
	25,700	1	0.002	0.002	0.002	1	0	0
Notes: 1. No vibration measurements were made. 2. Levels were too low to be detected. 3. Measurements were taken on November 16 and 17, 2009 at all locations except Waverley House and Newtown Manor House, which were only sampled on November 16, 2009.								

## 6.2 Comparison of Modeled and Actual Peak Noise Levels

One of NSWCDL's goals for the noise measurement program at historic structures was to compare the recorded airborne noise meter readings with the noise levels predicted by the Department of Defense's (DoD's) large-caliber weapon-noise model, BNOISE2. Comparing the actual noise measurements from the historic structures with model results would help to refine and validate the accuracy of the noise model.

The model-predicted noise levels were compared to the maximum airborne noise levels recorded at each historic structure, as shown in Table 8. The results indicate that the BNOISE2 model-predicted average peak airborne noise levels were equal to or above the maximum recorded peak noise levels under normal weather conditions. Therefore, the BNOISE2 model, using average weather and propagation conditions, conservatively predicted, and sometimes slightly overestimated, the peak airborne noise levels on the PRTR from 5"/62 Caliber gun firing under normal weather conditions.

**Table 8**  
**Comparison of BNOISE2-predicted Average Peak Noise Levels with Maximum Peak Noise Measurements for the 5"/62 Caliber Gun**

Site	Measured Maximum Peak Noise (dBP)	BNOISE2-predicted Average Peak Noise (dBP)	Difference (BNOISE2 – Measurement)
Waverley House	122	122	0
Stratford Hall	112	118	+6
Newtown Manor House	108	114	+6
Greg House	129	129	0
Bell House	126	127	+1
Christ Episcopal Church	102	<115	N/A

## 7 CONCLUSIONS

The noise and vibration measurements taken at six historic structures along the PRTR in November 2009 indicate that:

- All peak airborne noise levels measured during two days of tests were below 134 dBP, the threshold for glass and plaster crack damage in stressed or deteriorated structures (Siskind et al., 1989). Therefore, the potential for structural damage impacts at historic structures – as well as at other structures along the PRTR – from the firing of NSWCDL's large guns is minimal.
- Based on the low vibration levels measured over the two-day measurement period, it is unlikely that NSWCDL's large gun firing would result in noise and associated vibration levels strong enough to cause damage to any structure, including historic structures.

The airborne vibration levels measured on the walls of four of the six structures showed vibration levels below the 0.1 in/sec vibration concern threshold (see Table 2):

- Christ Episcopal Church (a maximum of 0.005 in/sec for the interior plaster)
- Newtown Manor House at St. Francis Xavier Church (non-detectable)
- Stratford Hall (a maximum of 0.06 in/sec)
- Greg House (a maximum of 0.06 in/sec).

The airborne vibration levels measured on the wall of the Waverley House showed wall vibration at levels below the conservative potential vibration damage threshold of 0.5 in/sec.

The airborne vibration levels measured at the wall of the Bell House showed one exceedance (0.54 in/sec) of the 0.5 in/sec threshold. However, since the 0.5 in/sec threshold was conservatively set as a potential effect level for glass in poorly-fitted windows with loose glass or plaster cracks on stressed walls, vibrations slightly above this level would not be expected to cause any structural damage to the house. As indicated previously, a vibration level of 2.0 in/sec is the threshold level at which minor structural damage may begin to occur in 0.01 percent of structures (one in ten thousand). The highest measured wall vibration level at Bell House is still well below this threshold.

- Comparing peak airborne noise levels predicted by the BNOISE2 model with actual measured peak noise levels indicates that BNOISE2 model-predicted average peak noise levels are equal to or above the maximum measured peak noise levels under normal weather conditions. Therefore, the BNOISE2 model conservatively predicts the peak noise levels on the PRTR from large-gun firing under normal weather conditions.
- Peak vibration and noise levels varied at each historic structure even though the projectiles being fired contained about the same amount of explosives and impacted



the same target areas. These variations were caused by changing weather conditions during the two days of measurements. For example, midday on the second day of measurement, wind direction shifted, wind speeds picked up, and partial cloud cover became complete, which enhanced noise levels that afternoon.

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## 9 QUALIFICATIONS OF NOISE ANALYSTS

Coordinating with NSWCDL's test, environmental, and noise control staff, AECOM personnel planned the noise measurement process, set up and operated the measurement equipment, and analyzed the resulting data presented in this report. The qualifications and experience of the AECOM noise analysts are summarized below.

**Mr. Bernhardt H. Hertlein**, a Principal Scientist with a BS in Civil Engineering, Electrical and Mechanical Engineering, serves as the head of AECOM's Non-Destructive Evaluation (NDE) & Geophysics group with 39 years of experience in measuring the impact of vibration on materials and whether materials have been compromised from use. He is responsible for NDT and geophysical and vibration measurement technology used for construction quality control, structural integrity, and condition assessment, and monitoring of remedial and rehabilitation works. He specializes in developing new applications for NDE methods, designing and building required hardware, and writing appropriate software. Some of his representative projects include:

- Project Manager for evaluation of vibration conditions for new and existing magnetic resonance imaging systems at over 750 hospitals and medical centers throughout the US and Central America.
- Project Manager for quality assessment and condition evaluation on high-rise structures, including utility smokestacks and storage silos. Completed surveys on more than 25 stack and silo structures at generating plants and industrial sites in various parts of the US, using NDT test equipment, visual, and laboratory analysis techniques.
- Developed and performed NDE program for underground nuclear waste-storage tanks at the Department of Energy's Los Alamos National Laboratory.
- Project Manager for a number of vibration monitoring and evaluation projects, including continuous monitoring of vibrations at long-wall coal mines in Virginia and Kentucky and quarry blasting sites in Indiana and Illinois.
- Project Manager for cross-hole sonic log and/or gamma/gamma log testing of large-diameter drilled shafts for more than 80 large bridge and highway construction projects nationwide, including:
  - Marquette Interchange Reconstruction, Milwaukee, Wisconsin,
  - Kentucky Dam Highway and Railroad Bridges, Paducah, Kentucky,
  - Driscoll Bridge, Keasbey, New Jersey,
  - 180th Street Underpass, Kent, Washington,
  - I-85 Quarry Bridges, La Grande, Oregon.
- Peer reviewer/consultant for deep foundation testing procedures, data analysis, and interpretation on other major bridge construction projects, including:
  - Cooper River Bridge, Charleston, South Carolina,
  - Oakland Bay Bridge, San Francisco, California,
  - Richmond-San Rafael Bridge, Richmond, California,
  - Hood Canal Floating Bridge, Olympic Peninsula, Washington,
  - First Avenue Bridge, Oro Valley, Arizona.

**Mr. Sean Brady** is a Senior Instrumentation Specialist with a BS in Electronics Engineering in AECOM's Non-Destructive Evaluation (NDE) & Geophysics group. He has 15 years of experience with numerous geophysical exploration and NDE techniques, such as Cone Penetrometer Testing (CPT), Ground Penetrating Radar (GPR), Cross-Hole Sonic Logging (CSL), Impulse Response Spectrum (IRS), magnetometers and conductivity meters, load cells, strain gauges, Ultrasonic Pulse Velocity (UPV), and vibration monitoring. He also serves as electronics technician responsible for repair, maintenance, calibration, and fabrication of equipment used in NDE. Representative projects include:

- Emergency vibration monitoring of the Jones Waste Water Treatment plant to predict structural damage as a result of imploding a damaged section of the large Hoan Bridge in Milwaukee, Wisconsin.
- Used geophysical methods, including radio detection (RD), ground penetrating radar, conductivity, and electromagnetic survey to locate underground utilities at multiple sites for Telecom Towers at ConEd Electricity Substations, and at Exelon Nuclear Power Plants throughout Illinois.
- Monitored vibration levels at Fermi National Laboratories, Illinois, using a Sprengnether 1600 seismograph during sheet pile driving and demolition of underground tunnel for their accelerator ring expansion.
- Monitored different weighted sound level measurements during pile driving at Northwestern Medical Center, downtown Chicago.
- Performed and evaluated vibration conditions for new and existing magnetic resonance imaging (MRI) systems at over 250 hospitals and medical centers throughout the U.S. and Canada.
- Developed a vibration monitoring program for H-Pile driving at the Port Authority Tunnel in Detroit, Michigan. Reviewed data collected by AECOM field technicians.

**Mr. Fang Yang**, a Senior Environmental Scientist with a BS in Physics and a MS in Atmospheric Science, is the head of AECOM Environment's noise and vibration group. He has 22 years of experience conducting noise and vibration studies. He uses regulators' mathematical modeling methods plus field noise and vibration measurement programs in his work. He has developed specialized modeling methodologies to address complex and site-specific noise problems by working closely with regulatory agencies. He has extensive experience in providing noise consulting services to military installations. He has also provided expert testimony on noise studies developed by others in court cases at both federal and state levels. Representative projects include:

- US Navy, Naval Facilities Engineering Command, Mid-Atlantic. Noise Impact Study for the Army Weapons Test Facility at Fort Story, Virginia. Project manager for a field noise and vibration-monitoring program for both noise and vibration impact from various types and weights of explosive detonations.
- US Navy, EFD Pacific. Relocation of US Marines from Okinawa to Guam Environmental Impact Statement, Guam. Project manager for a task to develop aircraft noise contours around Anderson AFB for several EIS alternatives.

- US Navy, Marine Corps Base Camp Lejeune and Marine Corps Air Station at Cherry Point, North Carolina. Task manager for developing base-wide large-caliber weapon noise contours and critical range small arms noise contours under three scenarios using the BNOISE2 and SARNAM models.
- US Navy, Naval Facilities Engineering Command, Mid-Atlantic. Small Arms Testing and Evaluation Compound at Virginia Beach, Virginia. Task leader for weapon noise impact analyses for construction and operation of this explosives and small arms range complex for urban training. Predicted event peak and cumulative DNL noise contours for both small arms and large weapon components using both SARNAM and BNOISE2 models at two alternative sites. Innovatively utilized BNOISE2 model options in developing more reasonable noise contours to reflect noise propagation along the site-specific topographic conditions around the site and successfully helped the project going through the regulatory process.
- US Navy, Naval Facilities Engineering Command, Mid-Atlantic. Environmental Assessment for Proposed Range Facilities at Fort Story and Little Creek, Norfolk, Virginia. Task leader for air quality and noise impact analyses for construction and operation of this 24-acre explosives and small arms range complex including five different ranges at two potential sites. Developed a weapon noise analysis approach based on existing noise monitoring and modeling results for similar types of weapon training and performed noise impact analysis using both SARNAM and BNOISE2 models.
- US Navy, Naval Facilities Engineering Command, Mid-Atlantic. Environmental Assessment for Night-firing Range Operations at Little Creek, Norfolk, Virginia. Developed a field noise monitoring program for both pistol and rifle range night-firing exercises. Also predicted noise contours resulting from the proposed gun firing range operations using SARNAM.

**Mr. Marko Stamenovic**, an Acoustics and Vibration Specialist with a BS in Mechanical Engineering/Acoustics, has two years of experience in vibration monitoring for transportation projects (both tunnel and aboveground) and remediation projects in sensitive communities. Representative projects include:

- Trans Hudson Express Tunnel New Jersey Transit Vibration Monitoring. Palisades, NJ and Manhattan, NY.
- Sag Harbor Gas Ball Remediation Vibration Monitoring. Sag Harbor, NY.
- Los Angeles Metro East Bay Extension Noise and Vibration Monitoring. Los Angeles, CA.
- CSX Intermodal Freight Facility Noise Monitoring and Forecasting. Hanover, MD and Memphis, TN.



**Mr. Brian Brownworth**, a Noise Specialist with a BS in Mathematics and an MS in Environmental Engineering, has 7 years of experience in noise and vibration-related studies. Representative projects include:

- Weapons noise modeling at Marine Corps Base Camp Lejeune in North Carolina.
- Noise barrier design study including extensive impulsive noise monitoring and modeling at multiple CSX rail yards throughout the US.
- Noise monitoring and noise and vibration forecasting for highway, transit, and construction activities associated with the 30-mile Tappan Zee Bridge/I-287 corridor development project across the Hudson River.
- Noise impact analysis at multiple airports in the US for implementation of the F-35 Joint Strike Fighter.

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